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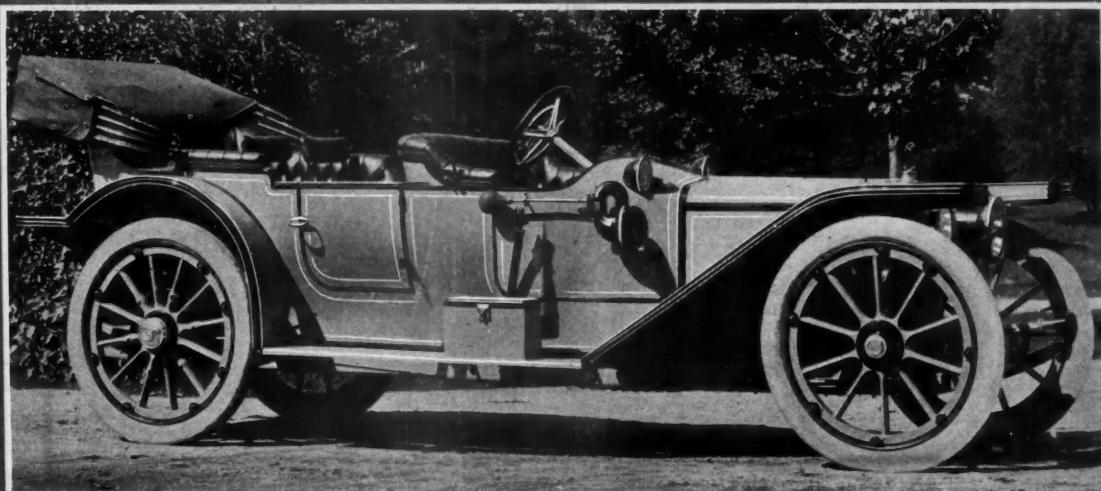
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MOTOR AGE

VOLUME XXI

CHICAGO, FEBRUARY 15, 1912

NUMBER 7



THE AMERICAN UNDERSLUNG

The "American Traveler" (Type 56) \$4500

Six passengers. Wheel base 140 inches; tires 41x4½ inches, front separate from ignition battery; Prest-O-Lite tank; Bosch magneto and rear on demountable rims. Springs, front, 40 inches; rear, 54 inches. Two auxiliary seats in the tonneau. Regular equipment includes top and top boot; 5 lamps, side and tail lights electric, supplied by battery

You seldom hear any one dispute the manifold practical advantages of the AMERICAN Underslung motor car, nor the beauty of its low body lines. Engineers the world over concede its superiority.

The AMERICAN Underslung has no competition. The dealer who handles it has everything to talk about that his competitor has not. Every AMERICAN point is a distinct AMERICAN selling point. No other can claim the safety and economy. No other can give the low stylish striking body design.

The AMERICAN is the only really different car made. Take any other ten high grade cars and they all look and act precisely alike. The line of a door might be different, or the hood might have a different

slope, BUT FUNDAMENTALLY THEY ARE ALL ALIKE, AND THEREIN IS THE DIFFERENCE BETWEEN THE AMERICAN UNDERSLUNG AND ALL OF THE OTHERS.

There are three types—one to fit the purse of every possible purchaser. Remember, every practical and attractive AMERICAN point is a point you can do business on and one that you have absolutely no competition on.

Write at once for full particulars and specifications of the easiest selling high grade car in America, and for our booklet entitled "The Advantages of Underslung Construction." Every dealer in America should have these facts.

The "American Scout" (Type 22) \$1250

Strictly a two-passenger car. Wheel base 102 inches; tires, 36x3½ inches, front and rear on Q. D. demountable rims. Regular equipment includes top and top boot; 5 lamps; Prest-O-Lite tank; Bosch high tension magneto; tire holders; horn; jack; tools and tire repair outfit.

The "American Tourist" (Type 34) \$2250
Four passengers. Wheel base 118 inches; tires 37x4 inches, front and rear on Q. D. demountable rims. Regular equipment includes top and top boot; 5 lamps, dash lights electric; Prest-O-Lite tank; Bosch magneto and storage battery; one extra rim; shock absorber; foot-rest; tire holders, horn; jack; tools and tire repair outfit.

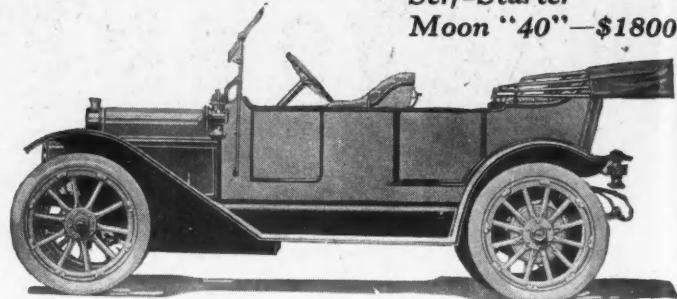
American Motors Company, Dept. H, Indianapolis, Indiana

Look Under the Hood and Beneath the Body!

As a life-long manufacturer, I want you to look at my big Self-Starting Moon "40" as a manufacturer would look at it. Look under the hood—look the engine all over, and make up your opinion *yourself*. Compare my 45-horsepower T-head motor with the motors of any other cars, even the high-priced ones. It took me five years to develop my motor. It is a long-stroke motor—4½-inch bore, 5½-inch stroke. It goes to full 45 horsepower on the brake test, and will take the car over any kind of road, and up any kind of hill. Just take in the big 4-bolt connecting rods—fan-in-the-flywheel—3-bearing crankshaft—1¾-inch bearings, the largest I know of in a motor of this size.



*Self-Starter
Moon "40"—\$1800*



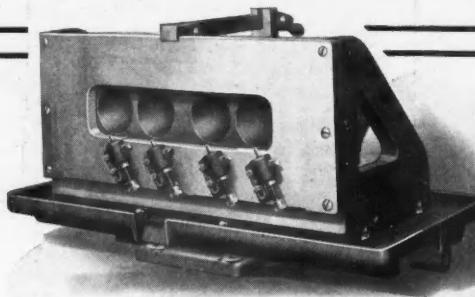
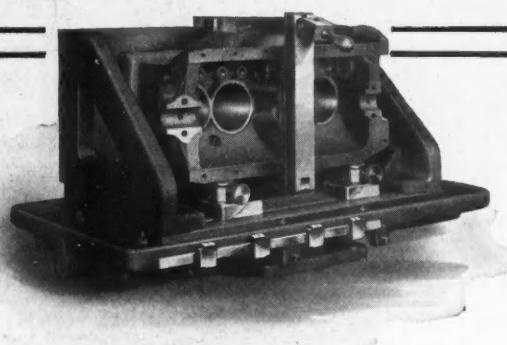
The Moon Self-Starter is a time-tried starter. I have been using a self-starter in my factory and road experiments for three years.

I want you to notice the Moon Frame. I never heard of a Moon's sagging. Observe the generous shaft and gears of the Moon Driving System—the big 36-inch wheels—demountable and quick-detachable rims—36x4-inch tires, front and rear—120-inch wheel base.

Then—when you have satisfied yourself, as I have, that Moon "40" is the utmost of mechanical excellence at \$1,800, the beauty of its roomy, all-metal body in nickel plate and black finish, and the completeness of equipment will appeal to you all the stronger.

Automobile Dealers! Moon's splendid proposition to agents will specially interest you. The Moon is represented almost everywhere. If not in your city, write to us. 1912 Catalog and the famous Moon Book of Charts sent on request

MOON MOTOR CAR COMPANY, 4403 No. Main St., St. Louis, Mo.



IT PAYS TO USE GOOD JIGS

which cut the time required to the minimum amount proportionate with the accuracy required.

The Jig shown is one of our standard jigs, to which has been added a quick clamping device, locating blocks, etc., and is for use on the Heald Cylinder Grinder.

Four diamonds and diamond holders are mounted on the face plate of the jig so that a diamond is in position to true the wheel at any time it should be necessary when grinding any hole.

These jigs are regularly made with interchangeable face plates which can be fitted to accommodate different

styles and sizes of cylinders, and in this way different types of cylinders can be handled at a very low cost for fixtures.

This particular jig, made up especially for one of our customers, is shown here to illustrate the study put into the handling of these problems by our Company, to facilitate in every way possible the rapid and economical production of work in connection with our grinding machines, with the result that not only is the grinding time reduced to the lowest point, but by the use of such devices the time required for changing work is also reduced to the minimum, making both savings available to the user, and so securing the largest production possible.

THE HEALD MACHINE COMPANY,

**26 NEW BOND STREET
WORCESTER, MASS.**

MOTOR AGE

It's Service That Turns Truck Wheels

Makers of Commercial Vehicles Stand Back of Their Product by Maintaining Systems That Protect Buyers—Experts Examine Power Wagons Monthly, Drivers Receive Motor Education and Inspectors Check up Work of Men Handling the Cars—Detectives Sometimes Employed



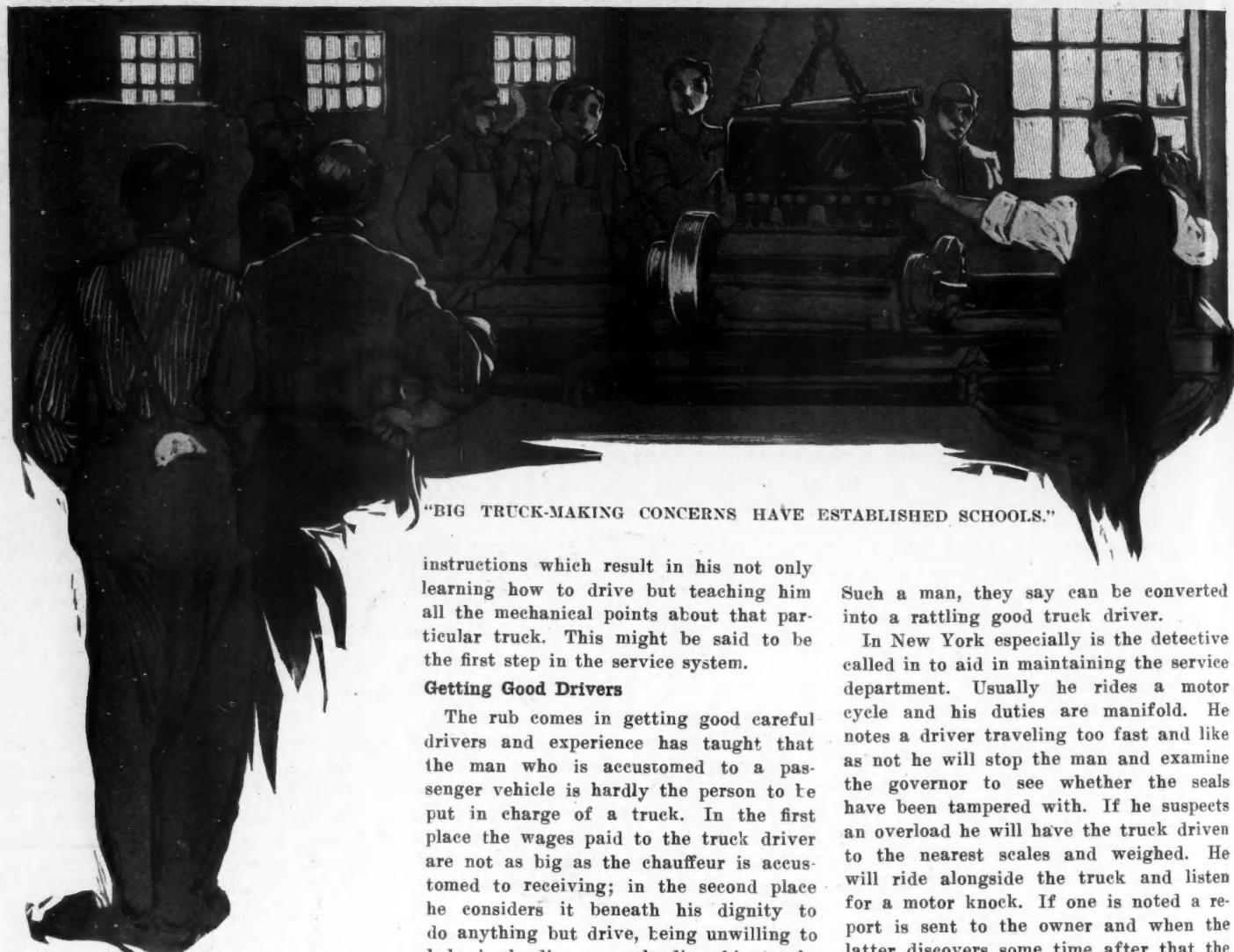
By
C. G. Sinsabaugh

HOW to keep a motor truck in commission at all times in order that its owner may realize to the full on his investment is the proposition that faces the manufacturer of commercial vehicles. A truck that is not always ready for work means a loss of time and money that makes the business man wonder if he has done right in abandoning his old friend, the horse. Therefore, it is up to the truck manufacturer to keep running

"IT IS UP TO THE TRUCK MANUFACTURER TO KEEP RUNNING THE MACHINES HE HAS SOLD"

the machines he has sold to the business men. To do that means an extensive service system that will cost considerable to maintain but one which is essential to the success of his venture.

To that end there has been a systematizing of the business that will eventually bring results in the point of service, by which term is meant keeping the commercial motor vehicle in constant operation by means of inspection at regular



"BIG TRUCK-MAKING CONCERN HAVE ESTABLISHED SCHOOLS."

instructions which result in his not only learning how to drive but teaching him all the mechanical points about that particular truck. This might be said to be the first step in the service system.

Getting Good Drivers

The rub comes in getting good careful drivers and experience has taught that the man who is accustomed to a passenger vehicle is hardly the person to be put in charge of a truck. In the first place the wages paid to the truck driver are not as big as the chauffeur is accustomed to receiving; in the second place he considers it beneath his dignity to do anything but drive, being unwilling to help in loading or unloading his truck; in the third place the speed bug has him fast in its clutches. He cannot accustom himself to the slow pace of 10 or 12 miles an hour and he is prone to beat it, which is most harmful to the truck. This predilection to speed up has led to the general adoption of the governor, but even this is useless unless the device is sealed or otherwise fixed so that it cannot be manipulated.

There is one truck-making concern which fights shy of the chauffeur. When it sells a truck its representative generally advises the buyer to take one of his old employees from off a horse-drawn vehicle, send him to the motor school and put him back of the wheel. Such a man generally is more steady than the chauffeur. He knows the traffic conditions of the city in which he works; he is familiar with the railroad terminals; he is on friendly terms with the horse drivers—and this means much—and he has an interest in the firm which employs him. Then, too, he gets a raise in wages that is greatly appreciated. In the opinion of some of the truck manufacturers, the ideal driver is a man of around 40 years of age, married or of settled habits, who does not pretend to know it all and who has been in the employ of the concern buying the truck for at least 5 years.

intervals, a coaching of the drivers and willingness to assist the owner in every way possible because of the organization back of the truck.

In carrying out this service proposition the truck makers find that the driver is the keystone of the whole proposition. The monthly inspections have shown this, for generally most of the troubles are caused by the failure of the driver to heed the instructions given when he is placed on the truck. Forgetfulness of lubrication is his besetting sin, speaking of him collectively. He forgets to screw down the grease cups and he forgets to keep his oil supply up. Consequently troubles follow that make necessary the inspection of the truck doctor. Sometimes this is caused by ignorance and oftentimes by laziness on the part of the driver. There are cases where these careless ones insist they make use of the grease cups and to detect them there is one concern at least which has resorted to putting paper in the grease cups in order to make out a case against the driver.

Schools for Truck Drivers

This trouble with the drivers has led to several of the big truck-making concerns establishing schools at which the embryo pilot is put through a course of

Such a man, they say can be converted into a rattling good truck driver.

In New York especially is the detective called in to aid in maintaining the service department. Usually he rides a motor cycle and his duties are manifold. He notes a driver traveling too fast and like as not he will stop the man and examine the governor to see whether the seals have been tampered with. If he suspects an overload he will have the truck driven to the nearest scales and weighed. He will ride alongside the truck and listen for a motor knock. If one is noted a report is sent to the owner and when the latter discovers some time after that the engine has gone wrong this evidence is brought in and the owner is told that the knock had been reported and that it should have been attended to.

Detectives report that the greatest failing discovered among truck drivers is the saloon habit. Some of the drivers cannot resist stopping for a nip and wasting considerable time with their feet on the brass railing. Then they try to make up this time by beating it with the truck, which may result in troubles that should not have occurred.

Where Service Worked

In connection with the driver and service, a story was told at the Chicago show last week which illustrated the influence the pilot has on the reputation of a power wagon. A call came in to a Chicago service station for help and a motor cycle took the inspector to the scene, 7 miles away, so fast that the driver was caught unprepared. It proved to be a false alarm. The truck had been in steady service for 47 days in which time it had covered 2,774 miles. So steadily and consistently did it run that the driver never had a let-up. Sighing for a rest that morning he had reported the truck out of commission and to make good his bluff he had taken out the spark plugs. The employer, not knowing the

true facts, had telephoned the dealer from whom he had bought the machine and the bluffer was caught red-handed. He smilingly admitted there was nothing wrong but said he had tried to get a few hours' rest and knew of no other way to get it.

Discussing the driver question, one man at the show declared that the capacity of the truck is limited to the capacity of the driver and that 20 tons a day just about represents the capacity of the man. The profit in trucking comes in tonnage, he says, and it is far more profitable to send big loads on short hauls than small loads on long ones. This same man also digressed as to the profits to be made in trucking and pointed out that seldom it is that one hears of a truck concern getting into financial difficulties. He has it figured out that there is 33½ per cent profit in trucking.

Profit in Trucking

This tradesman tells of a truckman who kept tab for 12 years and found out that it cost him just exactly \$6.40 a day to operate a two-horse vehicle. He also states that big packing concerns figure that it costs 60 cents an hour to operate a two-horse team and 90 cents for a three-horse rig, that is counting only the time the vehicles are out on the road.

Taking up the motor proposition, this same man declares that in figuring maintenance there are two divisions. Under the head of fixed charges come the interest on the investment, insurance, garage and driver, which will run from \$3 to \$6 a day for 365 days in a year. Under the other head comes operating charges which take in tires, depreciation, repairs, lubrication and gasoline, which are figured on a mileage basis and with a 5-ton truck it runs to 15 cents a mile.

That one of the first things taken up by a concern just starting in the industry is service was made clearly evident at

the commercial show in Chicago last week and at the same time it was brought out that service is the foundation of many of the companies which already have gained a footing in the business world. It must be confessed, though that with some this system of service only is starting while with others it has been working long enough to prove that it is essential in the truck business.

Meaning of Term "Service"

By this term service is meant a regular inspection of the trucks, say once a month, by a trained mechanic who can tell at a glance what is wrong; a coaching of the driver who may be a recruit from the ranks of the horse teamsters; an adjustment of parts, such as magneto, carburetor and oiler; a living up to the terms of the guarantee in the way of replacement of defective parts and a willingness to help the business man in every way possible, even going so far as to furnish a substitute truck when the business man's machine is out of commission. This last, though, is a disputed point, some claiming that this is carrying it a little too far, while others say they are willing to do this, provided the business man will pay for the actual cost of maintenance without the truck manufacturer trying to make anything out of it. Still others give this service free. However, this point is one that will be straightened out by time.

There are two or three ways of construing the term service. Some of them are logical, while others sound too extravagant to be true. For instance, one case is reported where service was construed into a promise on the part of the maker to maintain a truck for \$60 a month which included garaging and washing it, furnishing gasoline and oil and looking after the tires. This, however, only applied to the first year. Inasmuch as one maker figures that the cost of maintaining a 5-ton truck is at least \$9 a day, it would seem as if such a promise of service was made more with the idea of selling the truck rather than holding the customer afterwards.

There is one big concern which has been working on this service idea for 6 years and which has evolved a system which is

held up as a model to others. It is an expensive one at that, the company figuring that it costs at least \$100,000 a year to maintain it. But it is a wonderful system and compels the maintenance of 350 service stations in all parts of the world and the keeping of a staff of at least 700 men who do nothing else but watch the trucks that have been sold and see that they are tuned up.

Figuring that the average life of a truck is 10 years, this company sets out to make at least a monthly inspection, two times a month if possible. Following this inspection, the inspector makes out a report in writing in which he tells the condition of the various parts. There are twenty-one questions in all that he has to answer, involving motor, carburetor, circulation, ignition, clutch, steering gear, lamps and horns, lubrication, brakes, radius rods, etc. This report also is sent to the owner. On the second visit the old report is consulted and the inspector is able to discover whether or not there is anything radically wrong, presuming of course, that everything was in working order on his first visit.

Work of the Inspector

This inspector goes even farther. If the carburetor is out of adjustment he fixes it and shows the driver how he does it. If there is anything else of this nature he also coaches the driver as to how it can be cared for; but of course if there is anything serious then the truck is given over to the repairman.

This same company utilizes motor cycles in its service department, the two-wheelers being put to a variety of uses.



"DETECTIVES REPORT THAT THE GREATEST FAILING DISCOVERED AMONG TRUCK DRIVERS IS THE SALOON HABIT."

Army of Stockholders Causes Trouble

Usually in a service station there are two inspectors who take turns staying in the shop. Should an emergency call come in and the trouble being only of a trifling nature, the inspector hops on the motor cycle and whizzes to the relief of the truck. In case there is a breakdown, which is not often, and it is necessary to shift the load, the company's demonstrating truck is sent out and the driver helped out of his trouble.

Uses of the Motor Cycle

Another use to which the motor cycle is put is to check up on the drivers themselves. The owner is not satisfied with the service he is getting. He suspects maybe the driver is loafing on the job and wishes to find out. The motor cycle inspector is sent out to follow that truck for a couple of days and report. Sometimes the driver is a wary old bird and then the inspector takes a touring car and plays detective. In this manner it often is possible to bring out that it is the fault of the driver and not the truck that efficient service is not being given.

Detective work often is necessary to save the reputation of a truck which is being abused by being overloaded. Many business men wrongfully interpret this term overload and think it gives them leeway to carry more merchandise than the truck makers had figured on. So when this is suspected the motor cycle enables the car company to find out for itself. Of course this has to be done generally by observation but if necessary recourse may be had to shipping statements. This term overload is not generally understood. Overload is not intended for overload merchandise but is a factor of safety, the provision being for cases where a truck strikes a chuck hole, for instance. Then the strain put on often is five times greater than when the truck is running on a smooth road. The overload then comes into play and the strain is not felt as it would be if the machine were loaded to its fullest capacity.

There are other kinds of service which differ somewhat from the above although the principle is the same. But they all are united in supporting this monthly inspection idea. They believe that this is necessary to not only keep a satisfied customer but to protect their own reputations which might be injured through the ignorance or carelessness of the drivers.

Flying Squadrons Maintained

Some maintain a sort of a flying squadron which does most of its traveling by train, being sent out from the company's headquarters in New York or Chicago. One of these companies sends out its men from New York and these men after each inspection not only report to headquarters and the owners but also to the

American Automobile Mfg. Co., of New Albany, Ind., Thrown Into Receiver's Hands—Nine Thousand Persons Interested in Manufacture of the Jonz Car Cause Complications

LOUISVILLE, Ky., Feb. 12.—The American Automobile Mfg. Co., of New Albany, Ind., which set out to make the Jonz car, has been thrown into the courts and a receiver appointed largely it is thought because the company tried to carry on business with 9,000 stockholders who now apparently are at war with the management. Those who have paid their subscriptions are lined up one side and fighting those who have not paid, it is declared.

The company's affairs figured in court proceedings last Friday when Chester C.

Jones, Carey C. Jones and Ellsworth Jones, stockholders, petitioned Judge W. C. Utz of the Floyd circuit court for a receiver, the court naming the New Albany Trust Co. The petitioners stated that the assets of the company amount to \$200,000, while the liabilities do not exceed \$49,000 of which \$9,000 is open accounts and \$16,000 notes. The plant, which is the old New Albany woolen mills, covering 6 acres of land and a half-dozen buildings, is bonded for \$24,000. Claim is made that the company is suffering from lack of capital.

This state of affairs brings to mind the policy adopted by the company which attempted to place its stock by means of an advertising campaign carried on through the monthly publications which resulted in the stock being divided among 9,000 persons, scattered throughout the country.

Trying to please so many masters evidently has been too much for the Jonz people, who have been forced to go to court with their differences. It is stated by Vice-President L. A. Boli that the petition is a friendly one which has been filed for the purpose of bringing about an adjudication of differences that exist among the army of stockholders and to protect those who have paid up against those who haven't. Boli says the company will be reorganized as soon as possible by the paid-up stockholders and that additional capital will be secured which will permit the company to go ahead on a more extended scale.

A. O. SMITH ACTIVITY

Milwaukee, Wis., Feb. 12.—To make the organization more compact and improve its working basis, the active stockholders of the A. O. Smith Co., of Milwaukee, Wis., manufacturer of motors, axles, parts, complete passenger and commercial cars and pressed steel frames, are buying up all stocks held by capital other than that which is intimately connected with the organization. The company is capitalized at \$1,200,000 and all but \$500,000 is held by the active members in direct charge of the business. L. R. Smith, secretary of the company, said: "The change in stockholders, which has been contemplated for some time, will be made in order to effect a more compact organization. No immediate changes are contemplated in the extent or control of the corporation, the policy of which will remain the same. It is our belief that when the purchase of stock is complete the working basis will be much improved."

Chalfant Quits the Thomas Company

President of Buffalo Concern Retires to Enter Wall Street—United Motors Declares Quarterly Dividend—Empire Company Will Reorganize—Colby Orders Many New Buildings

BUFFALO, N. Y., Feb. 12.—E. P. Chalfant has resigned as president of the E. R. Thomas Motor Car Co., to take effect next Thursday, in order to become associated with Harrison Williams, Broadway, New York city, in the financing and supervision of public utilities companies. In his new position Mr. Chalfant will serve as president of the Springfield Railway and Light Co., of Springfield, Mo.; president of the Sharon and Newcastle Railway Co., of Newcastle, Pa.; director of the Youngstown-Sharon Railway and Light Co., and director of sales of securities for Harrison Williams.

Mr. Chalfant will remain a stockholder in the Thomas company. As yet no announcement has been made as to who his successor as president of the car manufacturing concern will be. That will be decided next Saturday. It will be remembered that Mr. Chalfant came here less than a year ago from Detroit for the purpose of assuming command of the Thomas company, then undergoing a reorganization. He and his associates came from the Packard company, and in the time they have been here they have succeeded in their reorganization plans. At one time Mr. Chalfant was general manager of the Association of Licensed Automobile Manufacturers.

The Thomas company also announces that A. M. Cobb, formerly a Studebaker man, has been appointed manager of the Chicago Thomas branch to succeed Gaylord Warren, who has resigned.

UNITED MOTORS DECLARES DIVIDEND

New York, Feb. 12—Announcement was made last Thursday that the United States Motor Co. had decided to pass its quarterly dividend which was due this month. The reason given for this action is that it was deemed advisable to withhold the dividend, which amounts to approximately \$200,000, and to use the money for financing the spring business of the company.

In a partial report to the stockholders Benjamin Briscoe, president, states that the company is in flourishing condition and that during the past 5 months, known as the dull season in the motor car business, the company had marketed 6,512 cars against 4,483 in the corresponding period a year ago. This expansion of business and the prospective rush of spring trade decided the company to conservative action.

The passing of the dividend does not mean that the stockholders will lose the amount, for the preferred issue of the company carries cumulative dividends and will have to be paid eventually before any

division of profits can be set off to the common shares.

Mr. Briscoe states that certain administrative economies have been installed and perfected so that a total of between \$300,000 and \$400,000 has been saved in the yearly expense account. The quarterly statement is as follows:

	Decrease
Net profits	\$1,569,266
Interest on loans	718,756
Balance for dividends	850,510
Preferred dividends	738,411
Surplus	112,099
Previous surplus	1,428,320
Total surplus	1,540,419
Deduct inventory and adjustments	1,086,670
Profit and loss surplus	453,749
	841,911
	*132,659
	974,570
	*Increase

EMPIRE WILL REORGANIZE

Indianapolis, Ind., Feb. 12.—Within a few days formal announcement will be made of a reorganization of the Empire Motor Car of Indianapolis, which has not been manufacturing cars for some little time, the plant in that city at the present time being devoted to the manufacture of the Prest-O-Lite starter. The company was organized by Carl G. Fisher and James A. Allison some years ago, and who now desire to withdraw from the manufacturing end of the motor car business.

In the reorganization, Cecil E. Gibson of the Fisher-Gibson will take a large block of stock and will be president of the concern. B. W. Twyman of Columbus, O., will be another stockholder and will become one of the directors. Twyman formerly was identified with Indianapolis motor car concerns, but 2 years ago took a position with the Studebaker interests at Detroit.

When the company is reorganized, a new factory will be obtained, as the old Empire plant, in all probability, will continue to be used for manufacturing the self-starter.

GRAND RAPIDS AFTER TRUCK PLANT

Grand Rapids, Mich., Feb. 12—Prospects are bright for securing the Hoosier Limited Truck Co. for Grand Rapids. The committee of the Association of Commerce has thus far secured \$85,000 of the necessary \$100,000, and it is believed that the remaining amount will soon be available. E. A. Clements, Carroll F. Sweet and M. E. Brackett are conducting the campaign to secure the necessary placing of the stock in the city.

BUY LAND FOR COLBY PLANT

Davenport, Ia., Feb. 12—The Western Implement and Motor Co., which recently took over the Colby Motor Co., of Mason City, Ia., has purchased an 80-acre tract of land comprising the old Davenport mile

track northwest of the city and will establish a town to be known as Appleby, in honor of J. F. Appleby, vice-president of the company. The purchase price was \$25,000. In addition to the Colby cars, the plant for the manufacture of which will be moved from Mason City to Davenport, the company will make farm implements, including gasoline and kerosene tractors, the Appleby push-binder and the Appleby cotton-picker.

The Leonard Construction Co., of Chicago, has been given the contract for drawing plans and specifications for the following buildings, which, it is announced, will be erected on the newly purchased site and form the nucleus of a new town: Main building, 1,000 by 80 feet; office building, 50 by 80 feet; garage, 20 by 80 feet; foundry, 80 by 500 feet; grinding room and foundry storage, 80 by 500 feet; blacksmith shop, 60 by 500 feet; machine shop, 60 by 500 feet; two warehouses, each 80 by 500 feet; 100,000-gallon storage tank for naphtha; 100,000-gallon storage tank for fuel oil; 100,000-gallon water tank on 100-foot tower. All buildings are to be of reinforced concrete with saw-tooth roof construction, and will be one story in height, with the exception of the office building, which will be two stories.

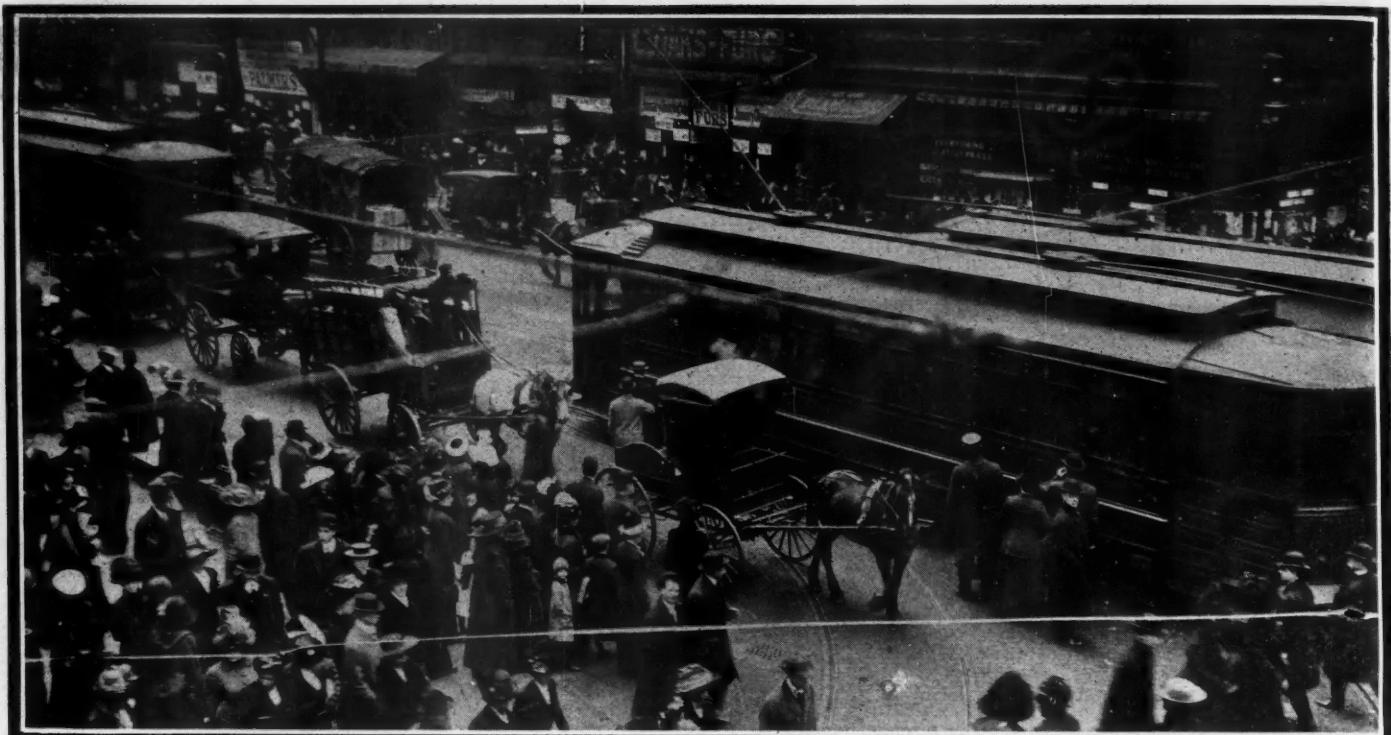
STEINBOCK FORMS HIS COMPANY

New York, Feb. 10—Incorporation papers have been filed with the secretary of state of New Jersey by attorneys representing H. E. Steinbock, of Peekskill, N. Y., for many years chief designer for the Maxwell-Briscoe company, and who recently severed his connection with the United States Motor Co. The new corporation is named the Steinbock Engineering Co., and is capitalized at \$1,000,000. The officers are: E. J. Forham, president; H. E. Steinbock, vice-president; F. B. Knowlton, secretary-treasurer. It is stated that the product of the new company will be on the market before July 4.

MEXICO BUYING AMERICAN CARS

New Orleans, La., Feb. 10—Central American and Mexican cities are spending more money each year for motor cars, as shown by exports through this port. Mexico City is the greatest buyer of motor cars. Over 80,000 tons of cars and accessories have passed through here consigned to Mexican ports. Practically all of the cars were billed to Mexico City, although Puebla and Guadalajara also were purchasers.

The laying of asphalt and cement streets in Guatemala City, Tegucigalpa, Honduras and San Jose, Costa Rica, is given as the reason for the increased number of cars going to the latter countries. While Latin-America has been interested only in pleasure cars, the advent of the commercial vehicle is testified to by scattered orders coming from the larger cities.



PEDESTRIAN CONGESTION AT STATE AND MADISON STREETS, CHICAGO

Note the crowd on the sidewalk waiting for an opening in the line of passing vehicles. First opening seen is between covered wagon and motor truck of which pedestrians take advantage

Control Pedestrians May Be Solution

FIVE hundred and eighty thousand pedestrians are accommodated and controlled in the loop district of Chicago in a single day. Each pedestrian daily crosses from eight to ten streets, an aggregate of over 5,000,000 crossings which must be guarded and controlled each day by the police system of this congested district. While these are passing on the sidewalks and street crossings, 130,000 vehicles and 3,100 street cars pass through the streets, these figures based on estimates furnished by Captain Healey of the Chicago mounted police. The control of pedestrians is necessary to the proper movement of these vehicles.

The movement of vehicle traffic in the streets is handled with a large degree of efficiency by the police system, but there has been but a half-hearted attempt to control the enormous amount of foot traffic moving along sidewalks already scarcely adequate in area to accommodate the number of pedestrians using them. When the officer on the corner blows his whistle or holds up his hand traffic in one direction ceases instantly and traffic in the cross direction starts moving, so far as the street and vehicles are concerned, but pedestrians pay only such heed to the whistle as is necessary to the preservation of life and limb, impatient at delay and dodging through between wagons, teams and street cars at the first opportunity, very often holding up traffic for several minutes by so doing. If they would wait until the whistle blew for vehicle traffic

Chicago Offers Evidence of Necessity of Making Foot Passengers Obey Police Whistle

By William B. Stout

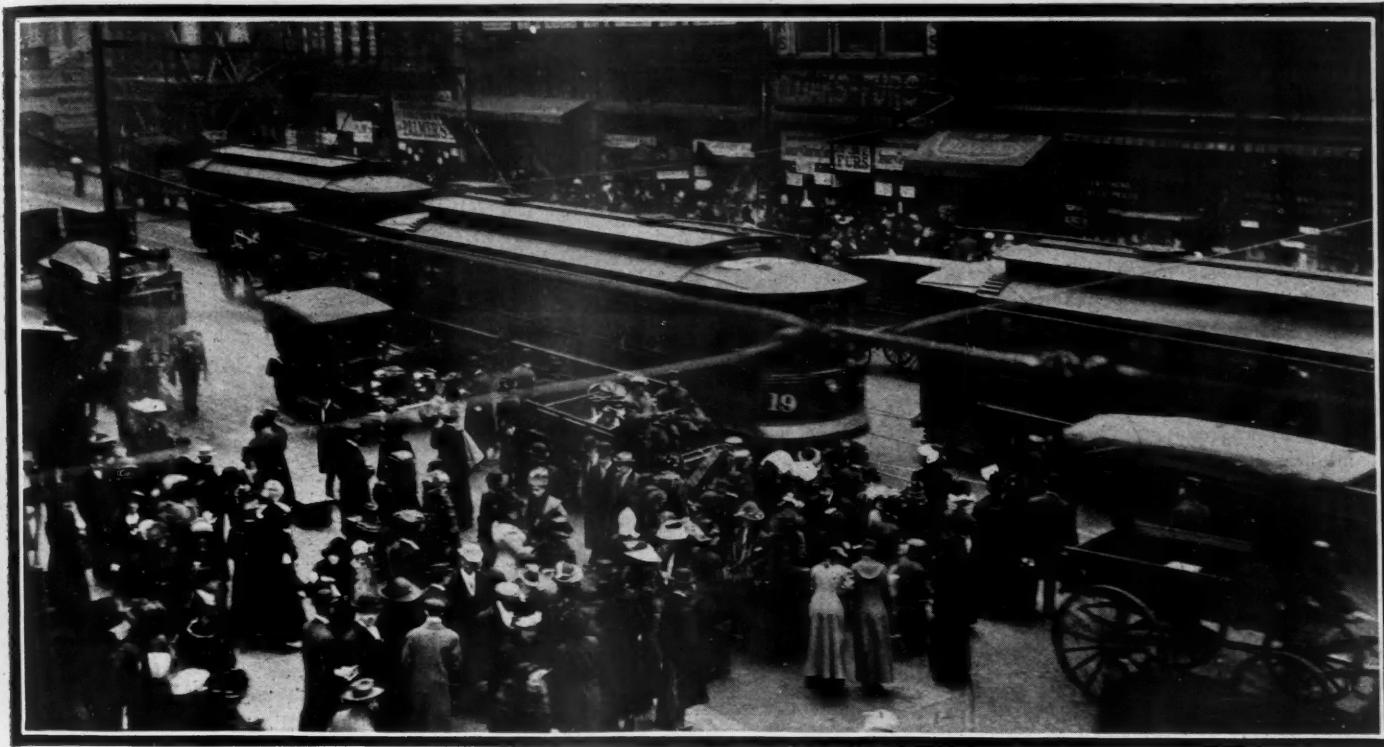
to change direction there would be much greater safety in their crossing and much less hindrance to street traffic, as is shown in the illustration below, which depicts

traffic as moving on the corner of State and Monroe streets on a recent date, with the foot traffic crossing the street on the left practically unhindered.

The number of pedestrians which may be seen at this corner is strikingly shown in the large illustration above, taken at a time when the traffic along State street had just been resumed, moving right and left in the photograph. The line of vehicles in the foreground, it will be noticed, is



CONGESTION AT STATE AND MONROE STREETS, CHICAGO



PEDESTRIANS OBSTRUCTING TRAFFIC IN CHICAGO

Pushing between the covered wagon and the motor truck, all vehicle traffic is held up until the people pass. Efforts on the part of the drivers to make the crossings are impeded by the pedestrians.

Traffic Congestion Noted in Chicago

very compact, with no spaces between vehicles near the crowd which is waiting on the corner to get through, accumulating a pressure which is bound to burst through with the first opening offered in the line of vehicles. Since a motor truck can scarcely move near enough to the vehicle in front to prevent a man passing between the two vehicles and yet travel with safety, the first opening in the line seen is between the covered express wagon

Vehicles Held Up in Business District Because Pedestrians Do Not Heed the Signals

and the following motor truck at the extreme left of the picture, near the end of the passing line of vehicles. The large illustration on this page gives graphic evidence proving this former conclusion, as it shows the crowd, which has now accumulated to a

considerable number, pushing through between the express wagon and the truck, completely blocking the latter from any advance until the pedestrians have crossed. This inability to close up the space between the truck and the preceding vehicle without too great a degree of risk is probably one reason why trucks are hindered in crowded districts even more than horse vehicles. Answer is also given to a question which came up during some of last summer's truck runs, where power wagons of large size made even better time through congested districts than the smaller and faster delivery wagons. The public is used to motor cars and hence is not afraid to break across the path of a slow-moving light delivery vehicle, as in the illustration, but if this had been a heavy vehicle, as in the case of a department store truck, the pedestrians undoubtedly would have been influenced by a certain sense of fear and have taken their chances behind this vehicle, instead of attempting to stop it. Evidence of this was given in the illustration of the Boston store truck in a recent issue in connection with a description of that concern's delivery system.

It is possible to control this pedestrian traffic, and in the future something definite will have to be done along this line. Supposing a delay of 1 minute at each corner in every 10 minutes of the day, which is a very small percentage when one considers the traffic in both directions. This would mean an aggregate de-



NOON TRAFFIC, MANY PEDESTRIANS, FEW VEHICLES

lay of 1 hour during every 10-hour working day at each street corner in the loop, a delay influencing each one of the 130,000 vehicles moving through the loop during that period. When one considers the lost time, this means in the conveying of the 80,000 tons of merchandise which moves through the loop every day, the figure is enormous.

Vehicles crossing the loop are hindered at least 1 minute each in their passage by uncontrolled foot passage. Allowing the 1 minute for each of the 130,000 vehicles which Captain Healey states pass daily through the loop, this would figure in 1 day an aggregate of 90 days 6 hours 24 minutes wasted, over 3 months lost to the business interest of the loop through uncontrolled traffic of pedestrians; and 1 minute per vehicle is a very low average for such delay.

With the coming of universal motor traffic the importance of eliminating these delays will increase three-fold, so that some controlling system is bound to come at the demand of the new transportation. Captain Healey is very much in favor of some such system being installed at present, and looks with favor toward the motor truck as the greatest future factor for eliminating the congestion of the business district of the Windy City.

The problems in Chicago are only a reflection of the troubles of a large number of other cities in congested districts, and yet Berlin is the only city which controls its pedestrian traffic as well as wheeled vehicles. Those of the Fatherland may be slow in some things, but when they do a thing they do it thoroughly and with system and law. The foreigner as a whole has a greater respect for law than the American, possibly with just cause, and hence obeys the rules of the streets to a greater extent than here. However, in the commercial centers, and as a matter of safety to foot traffic, America must come to adopt many of the European methods. The old cities of Europe are cumbered with narrow, winding and hilly streets, rough cobble surfaces and French pave, with many dangerous corners and narrow sidewalks, conditions left from feudal and medieval times. These still obtain, and cause a large part of the traffic problems abroad under the new conditions of faster transportation. Since Europe has gone about its task of alleviating these difficulties with so great a degree of thoroughness, and has accomplished concrete results in the handling of traffic, it is but ordinary common sense for America to adopt a similar method as a basis, adapting it to meet our own especial conditions, the matter of adequate control of pedestrian traffic being but one example.

When this is properly controlled and pedestrian delays eliminated from the street traffic of the loop there will be a much greater chance for motor vehicles to make good in delivery service.

To Standardize the Commercial Car

Society of Automobile Engineers Appoints Special Committee to Handle the Matter—Each Truck Must be Able to Render Normal or Continuous Service Under Its Tonnage Rating

NEW YORK, Feb. 12—A committee has been created by the Society of Automobile Engineers to consider the subject of motor truck standardization. At a recent meeting it determined the specification of normal load and the overload of trucks from 1 to 5 tons, and it was generally decided by vote that each truck should be capable of rendering normal or continuous service under its tonnage rating and have an overload capacity for temporary or emergency service or 25 per cent of its normal tonnage capacity.

Next an attempt was made to determine the desirable speeds for various sizes, and by a process of voting the following was arrived at: 1-ton trucks, 15 miles per hour; 2-ton trucks, 12 miles per hour; 3-ton trucks, 12 miles per hour; 4-ton trucks, 9 miles per hour; 5-ton trucks, 8 miles per hour. These determinations are simply tentative to enable the committee to make a start and may be subsequently modified.

Considerable discussion took place as to what should be the determining factors for capacity and it was agreed that the committee would take under consideration in this connection horsepower expressed in the dimensions and speed of the motor, as well as in drawbar pull of the truck in completed condition; springs—length, number of leaves, width and thickness; frame in so far as the general dimensions are concerned; brake surface, expressed either in superficial dimensions or in effect; size of gear teeth and pitch; size of sprockets and chains; tread; spring center dimensions; proportion of load on front and rear axles.

With this material under consideration for the next meeting every member present promised to give these elements consideration so as to have the discussion of them at the next meeting mature and decisive.

It was determined that the committee would write to manufacturers of axles for both motor trucks and horse vehicles and inquire their present practice insofar as dimensions relate to load-carrying capacity. It also was determined to secure the present specifications of motor trucks as now manufactured, and at a little later date to request the recommendations of motor truck manufacturers as to what their judgment would be in the matter of critical specifications on various size trucks insofar as they relate to axles and their essential elements above mentioned.

This committee consists of William P. Kennedy, chairman; H. F. Donaldson, Coker F. Clarkson, Eugene F. Russell, A. H. Ehle, Bruce Ford, John M. Mack, P.

H. Breed, F. W. Trabold, F. R. Whitney, Robert McAllister Lloyd, W. A. Frederick, Charles B. Whittelsey, and Charles L. Schwarz.

BRINGING OUT CARBURETION DEVICE

Manitowoc, Wis., Feb. 12—The American Compensating Valve Co. has been incorporated here with a capital stock of \$25,000 by Ladwig Stupecky, Stanley D. Eekels and Charles Zeman to manufacture and market a carburetion device. The device is the invention of Mr. Stupecky, and it has been protected by patents in the United States, Canada, Great Britain, France and Germany. Exhaustive tests have been made on motor cars and trucks. Mr. Stupecky claims that his invention, which replaces the air valve on the carburetor and does away with necessity for adjustments, will eliminate carburetion troubles. The newly organized company will not engage in manufacturing for the present, but has contracted with a large machinery company at Manitowoc to produce it in large quantities.

SEEKS TO HOLD PREST-O-LITE PLANT

Indianapolis, Ind., Feb. 12—It is quite likely that an ordinance forbidding the manufacture of explosives inside the city limits will be amended by the Indianapolis city council to permit the Presto-O-Lite Co. to move its gas manufacturing plant inside of the city, and that the company will not carry out the intention, announced some time ago, of moving to another city. An ordinance has been introduced in the council, permitting the location of such plants not closer than 200 feet to any other building or public highway.

KUHNER MAKING TRUCKS

Oxford, Md., Feb. 12—The Kuhner Engine Co. has begun the manufacture of light delivery trucks at its plant in this city, the vehicles using the Kuhner engine. The company's plant is 50 by 160 feet and has a tidewater frontage. The officers of the company are: H. E. Kuhner, president; Alexis G. Pascault, vice-president; George M. Wingard, secretary; William B. Shanahan, treasurer; Francis G. Wrightson, William Mason Shehan, M. Tilghman Johnston, F. L. Corkran, W. M. Bergman.

PROMOTION FOR FRANK MARTIN

Akron, O., Feb. 12—Frank H. Martin has been placed in charge of the motor car tire department of the Firestone Tire and Rubber Co., a promotion that has come after considerable service on the part of Mr. Martin, who has been manager of the Chicago Firestone branch and more recently special representative of the company.

Big Break Comes in the Rubber Market

Goodrich Company Buys 200 Tons Which Had Been Held for a Year by Brazilian Syndicate for Higher Prices—Attempted Corner Fails—New Stock Selling at Around \$1.08

NEW YORK, Feb. 13—A sale of Brazilian rubber, which is said to have cleaned up the stock placed for sale here by the Brazilian syndicate which attempted to corner the Para market, was reported Saturday. The B. F. Goodrich Co., manufacturer of motor car tires, was announced as the buyer of the lot, which amounted to nearly 200 tons. The price is said to have been approximately \$400,000. The syndicate, which is credited with still having on hand some 3,000 tons at Para, is said to have lost \$175,000 on the deal after holding the rubber here for about a year.

"I won't tell you the exact price of my purchase, nor will I confirm or deny the report that Belmont & Co. lost money on the deal," says B. G. Worth, president of the Goodrich company. "That some one lost a lot of money is evident, because when the market price was \$2 a pound, some time ago, this particular 200 tons was being held for still higher figures. Now, the new crop of rubber is just about to come on the market and the prevailing price is \$1.08 and may be lower, though no one can be sure of that, because the manufacturers seem able to absorb all that will be offered—at reasonable figures—so good is the outlook for business prosperity in 1912."

ILLINOIS AGENTS AT WAR

Bloomington, Ill., Feb. 12—Two organizations of Illinois dealers will appear for members this year. The first was formed during the Chicago show, and the second is scheduled for February 22 at a meeting in Bloomington. Both these have been announced in Motor Age. The first is to be known as the Illinois branch of the National Automobile Association, and has elected officers. Dissatisfied with the formation of the Illinois branch of the national association, a new body is to be formed, a temporary organization electing L. C. Shellabarger, of Decatur, chairman, and J. L. Murray, Bloomington, secretary.

It is argued that a strictly Illinois association will be of greater advantage than a branch of the national organization. The name that probably will be chosen at the Bloomington meeting will be that of the Illinois Automobile Dealers Association. It is hoped many changes for the benefit of the dealers will result. Curbstone selling is to be eliminated as much as possible, and coöperative associations are to be opposed. A system of association garages through Illinois where tourists always can be assured of proper treatment, will be established. A closer espionage upon stolen cars is anticipated

as a result of the new organization. The association will work with car owners to secure protective legislation that will work to the interest of both owner and dealer.

LOZIER CASE POSTPONED

New York, Feb. 13—Application for an extension of time in which to file the bill of particulars demanded by Hugh Herndon, attorney for H. A. Lozier and the Lozier Motor Co., has been made by attorneys representing the plaintiffs in the suits of Williams & Rhinock against Mr. Lozier as an individual and the motor company. The significance of the action lies in the fact that it foreshadows the course that will be pursued by the plaintiffs and that the case will be tried in the supreme court rather than on a law point in the court of appeals.

F. R. Williams and Joseph L. Rhinock sued the Lozier company to enforce an alleged contract to sell or for damages sufficient to cover the profits lost by reason of the failure of the company to comply with the terms of the alleged contract. Mr. Herndon moved the court to require the plaintiffs to file a bill of particulars, showing the alleged contract and all the facts in their possession bearing upon it vitally. The plaintiffs had an opportunity to appeal from the order of court, but instead they applied for further time to compile the bill of particulars, showing that the case will be heard by the supreme court. The amended complaint, containing the facts asked for by Mr. Herndon is due next week.

BANKRUPTCY THREATENS

Washington, D. C., Feb. 13—Special telegram—Following the appointment of receivers of the Carter Motor Car Corporation an involuntary petition in bankruptcy has been filed against the corporation by the Champion Spark Plug Co., James Darnell and the Empire Auto Top and Body Co., whose aggregate claims amount to \$1,400. The bankruptcy court has issued a rule returnable February 20 calling on the alleged bankrupt to show cause why the corporation should not be declared a bankrupt.

WANT NEW RATE CLASSIFICATION

Sioux City, Ia., Feb. 10—An attempt to have a distinct rate classification set upon the various parts of motor cars is being taken up by the Sioux City Automobile Dealers' Association and will be taken before the interstate commerce commission. The dealers complain that they are compelled to pay first-class rate on all parts of cars whether those parts are new and in

good condition or worn out and reduced to a state resembling junk. Hardware dealers, they claim, are not subject to this expense but are given fourth and fifth class rates on all hardware placed in transportation.

BODY CONCERN EXPANDING

Racine, Wis., Feb. 12—At the annual meeting of stockholders of the Racine Mfg. Co., Racine, Wis., manufacturer of wood and metal motor car bodies, it was decided to increase the number of directors from three to seven in order to extend the supervision and responsibility and have charge of the policy of expansion which is made necessary by the tremendous growth of the business. The company's plant was swept away by fire on December 12, 1910. The capitalization then was increased from \$400,000 to \$800,000 and a new plant established. The size of this will be considerably increased during the present year by additional buildings.

MILLION DOLLAR CONCERN

Toronto, Feb. 12—A new company has been organized at St. Thomas, Ontario, under the style of Gaselectric Motors, Limited, with a capital of \$1,000,000. The company purposed manufacturing motor cars driven by hub motors, power for which is generated on the machine from a gasoline engine. The provisional directors are: E. H. Thomas, president; B. F. Honsinger, vice-president; H. F. Slater, Toronto, secretary and treasurer; H. C. Thomas, C. M. Preston, F. McKitching, St. Thomas and J. F. Roland, Toronto. Plans of the company will be announced later.

CAMERON RECEIVER APPOINTED

New York, Feb. 13—Creditors of the Cameron Motor Car Co. met at Salem, Mass., last week and at the end of the engagement it was found that the New York creditors, chief among which is the Eisemann Magneto Co., held the whip hand despite the fact that it was in minority both as to numbers and amounts involved. The company succeeded in having E. Howard Perley selected as receiver and Mr. Perley duly qualified.

TRUCK AGENCY IN BANKRUPTCY

New York, Feb. 14—Special telegram—The Motors Engineering and Sales Co. of New York, a company organized last year to handle the Kelly truck, was thrown into involuntary bankruptcy yesterday when Chester Griswold and several others identified with the company filed claims aggregating \$11,875. Mr. Griswold and his associates are officers of the concern which owes about \$14,000. The cause of the action developed after one of the other creditors obtained default judgment against the company for \$1,000, and its purpose, according to Mayer & Gilbert, attorneys, was to forestall summary action prejudicial to all the creditors. No receiver will be appointed and the attorneys predict a quick settlement of the matter.

MOTOR AGE

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The Lincoln Memorial Highway

WOULD it be more appropriate for the United States congress to spend \$2,000,000 to erect a Lincoln memorial in one of the Washington parks overlooking the Potomac in the form of a Greek temple, or to appropriate \$3,000,000 and build a Lincoln memorial highway from Washington to Gettysburg? This is the great problem that is interesting thousands of people in America at the present time. It is interesting these thousands because it is a settled fact that there is to be some physical and enduring expression of the country's appreciation of the great war president.

LAST year's congress made an appropriation of \$2,000,000 and appointed what is known as a Lincoln memorial commission with President Taft as chairman, the work of this commission being to select a site and pass on architect's plans for a suitable memorial. While this has been going on members of the senate have been busy in stirring up enthusiasm for the building of an immense national highway direct from Washington to Gettysburg, this highway to rival in history the famous Appian way built by the Roman consul, Appius Claudius, 300 years B. C. and which road is still in existence today and is considered the most famous highway ever built.

POPULAR sentiment favors the building of this highway as a Lincoln memorial in preference to erecting some form of Greek temple in a Washington park. President Lincoln was essentially a friend of the people, and it is questionable if any more practical memorial and any more fitting memorial could be erected to his memory. He was a unique president, he was a unique character, and it is particularly appropriate that he should be remembered in so unique and practical a method as this.

FROM Washington to Gettysburg is 72 miles, and this proposed national memorial would be of substantially this length and have an approximate width of 200 feet. It has been suggested that this highway would have two roadways, each 50 feet wide and with a green sward 50 feet in width between them. One of the roadways would be for fast-moving vehicles, the other for slower-moving ones. Outside of these roadways would be double-track electric railways, and outside of these, if necessary, railroad lines for steam trains. These suggestive thoughts on the roadway have been voiced from one side of the continent to another, and while the double roadway with the green sward is the aim to be achieved, the electric trolley is a possibility but it is questionable if the steam roads are even a possibility.

AGITATION for federal aid in road building has been before America for several years. This has been particularly aggressive during the last two seasons, and in the recent good roads conventions it has been a paramount issue. If congress is to take up the federal roads problem there is no better way or time to start it than in this Lincoln memorial highway. It is specially appropriate in that Lincoln himself journeyed from the White House to Gettysburg over this route and when at Gettysburg delivered one of the most famous addresses ever made, and one which will live so long as the American republic continues to exist, and then.

ONE of the big reasons for the construction of this highway, in addition to its suitability as a memorial to Lincoln, is the role it would play as an incentive to good road building in America.

Nothing is needed more today than good roads, and while congress has been giving aid to deep waterway routes, irrigation, and many other matters, it has been entirely overlooking the great problem of federal aid to roads. It is true many of the states have taken this question up in a bold way, and are making great progress, but it is also true that congress should show its good intentions by helping, and there is no more suitable or permanent way in which this could be done than by voting in favor of the highway as against the Greek temple overlooking the Potomac.

EVERY motorist in America is indirectly interested in this project, and can be of assistance. Clubs should band together and begin active campaigns in their respective congressional districts. Petitions can be presented to their home senators and Washington can be flooded with letters, favoring the highway as a memorial. This agitation cannot be started without concentrated effort, and there is no better way than through the motoring organizations.

EVERY motorist in furthering this cause should feel that he is working for the good roads movement, because, if possible to start congress in the federal aid work, it should be easier to make that start in conjunction with a movement of this nature than otherwise.

SPAKER CLARK has expressed himself as follows on this matter: "Congress appropriated \$50,000 for the purpose of having plans and specifications drawn for a Lincoln memorial, and agreed to appropriate \$2,000,000 to build it. There have been all sorts of propositions. It seemed to me to be absolutely unanswerable that Abraham Lincoln was one of the most practical of all the sons of Adam. In the first place, he didn't need any memorial, anyhow, but that if he could be consulted about spending \$2,000,000 to build him a memorial, he undoubtedly would want one that would do somebody that is now living, or to live hereafter, some good; and that his fame was inseparably linked up with Washington and with Gettysburg—made the most remarkable speech at Gettysburg that any man ever made, or that any man ever will make, I suppose. A road would be of some service, and a monument, too. One thing I do know is, that it was settled a long time ago that if the federal government wants to help build roads, it has got the right to do so. That much is certain. But the practical suggestion that I have to make in connection with federal aid is, that all the road advocates ought to agree on a plan and come here with it."

THE matter will receive official attention at Washington early in March and that is the time pressure should be brought to bear upon the law-makers. Undoubtedly there are other prominent members of congress who feel as does Speaker Clark, and if he is backed up vigorously by his colleagues it will be an easy thing to bring about the construction of this grand highway. Such a road would not necessarily be for motorists only, although they undoubtedly would make use of it, but it would be a highway dedicated to the people who thus would have a lasting testimonial to the fame of the great war president. As Speaker Clark says, Lincoln himself would prefer something practical if he could be consulted, and it is felt that nothing more practical could be constructed than a grand highway extending from Washington, the capital, to Gettysburg, greatest of American battlefields.

Dominion Asked to Aid Road Movement

TORONTO, Feb. 10—The deputation of good roads advocates which waited on the Canadian federal government last Thursday constituted the second largest delegation that has appeared before the Ottawa ministers in 20 years. Upwards of 250 representative men appeared representing the Ontario Good Roads Association, the Quebec-Miami International Highways Association and many municipal bodies. The deputation pleaded for a federal appropriation equal to 50 per cent of the cost of construction and another 50 per cent of the cost of maintenance, the latter being regarded as a very serious problem. Sir Robert Borden, the premier, assured the delegates that he and his colleagues were heartily in accord with the movement for better roads throughout not only the province of Ontario, but the other provinces of the dominion. The only difficulty that seemed to present itself was the right of the federal government to enter upon a plan to maintain provincial roads.

It would be going a little farther than was contemplated by the British North America act; but he said that in a bill which had already been introduced by the minister of canals provision would be made for grants to the provinces for road improvements, although the government was still undecided as to what method would be adopted in making these appropriations. The cost of maintaining the 50,000 miles

Canadians Want Appropriation to Maintain Highways—Chicago Hears Pleasant News

of partially improved highways in Ontario already exceeds \$4,000,000 of which the provincial legislature contributed something like \$1,000,000.

TO BOULEVARD SHERIDAN DRIVE

Chicago, Feb. 10—Plans have been made by the Lincoln Park commissioners to boulevard Sheridan road from Devon avenue to Lake Bluff, a distance of 30 miles, and to illuminate it as they do the Lake Shore drive. Resolutions that will bring this about have been adopted and all that remains is to secure the consent of the property owners. At the present time Sheridan road only is a boulevard as far north as Devon avenue. By boulevarding it to Lake Bluff it would do much to improve the route between Chicago and Milwaukee, furnishing a boulevard for almost half the distance.

COLORADO WELCOMES TOURISTS

Denver, Colo., Feb. 10—Basing his statement upon inquiries already received by his department from eastern owners Dr. F. L. Bartlett, director of the good roads bureau of the Chamber of Commerce, estimates that no fewer than 15,000 motor tourist parties will visit Colorado this sea-

son. Statistics of past years show that the parties average four in number, and that the average daily expense of each party is \$15. Thus, Colorado looks forward to a tourist season that will bring \$6,750,000 into the state, estimating the stay of each party as 30 days. The large amount of work being planned to improve the highways of transcontinental travel will make the journey from Denver to the Pacific coast much easier and safer. Unless unusually severe weather this spring hinders the improvements contemplated by western Colorado and eastern Utah counties some magnificent mountain highways will be ready for the thousands of motorists who wish to drive to the Pacific.

PROTECTING BRIDGES

Richmond, Va., Feb. 10—A bill offered recently in the house by Delegate Martin W. Williams, of Giles and Bland counties, is intended to protect the bridges in the various counties of the state, but at the same time it is of interest to motorists of the state and those who frequently pass through the Old Dominion. The measure provides a \$5 fine for any person who shall drive, or cause to be driven, over a bridge any motor car, motor cycle or other vehicle at a rate of speed of more than 5 miles an hour. The measure will be considered in committee before being put to a vote in the house. Motorists are said to approve the measure.

FEBRUARY

February 5-17—Annual exhibit, St. Louis; F. W. Payne, manager, St. Louis, Mo. Please cars, 5-10; commercials, 12-17.

February 10-17—Show at Atlanta, Ga., of Atlanta Automobile and Accessory Dealers' Association; Homer C. George, manager.

February 10-17—Fall River, Mass., second annual show; D. D. Corbett, manager.

February 12-17—Show at Troy, N. Y.

Kansas City

February 12-17—Show at Kansas City, Mo.; Wallace J. Terry, manager, 302 Long building, Kansas City, Mo.

February 12-17—Show at St. Paul; St. Paul Motor Car Dealers' Association; W. R. Willmot, manager.

February 12-19—Dayton, O., show; Elmer C. Redelle, manager, Dayton, O.

February 12-19—Show at Ottawa, Ont., Ottawa Valley Motor Car Association.

February 13-17—Show at Grand Rapids, Mich.

February 14-16—First show, Fort Dodge, Iowa.

Pittsburgh

February 17-24—Pittsburgh show; Pittsburgh Automobile Show Association, T. I. Cochran, manager, Pittsburgh, Pa.

February 17-24—Show at Newark, N. J.; New Jersey Automobile Exhibition Co.

February 17-24—Cleveland show; Cleveland Automobile Show Co., F. H. Galey, manager, Cleveland, O.

Minneapolis

February 17-24—Minneapolis show; Minneapolis Automobile Show Association; H. E. Pence, manager, Minneapolis, Minn.

February 18-24—Annual show Portland Automobile Dealers' Association, Portland, Maine.

February 19-22—Show of Minneapolis Automobile Dealers' Association, Minneapolis, Minn.

February 19-24—Show at Hartford, Conn.; Automobile Club of Hartford.

Coming Motor Events

February 19-24—Seventh annual show of Omaha Automobile Association, C. G. Powell, manager, Omaha, Neb.

Cincinnati

February 19-25—Annual pleasure car show; Cincinnati Automobile Dealers' Association, E. A. Kruse, secretary, Cincinnati, O.

February 20-24—Show at Binghamton; Automobile Dealers' Association; R. W. Whipple, secretary, Binghamton, N. Y.

February 20-25—Show of Automobile Dealers' and Traders' Association, New Orleans, La.

Baltimore

February 20-28—Annual show, Baltimore, Md.; Baltimore Automobile Dealers' Association.

February 21-28—Toronto show; Canadian National Automobile Association; W. J. Ross, secretary, Toronto, Canada.

February 20-28—Annual show, Baltimore, Md.

February 22-24—Show at Bloomington, Ill.

February 24-27—Taunton, Mass., first annual show; D. D. Corbett, manager.

February 24-March 2—Annual show; Brooklyn Motor Vehicle Dealers' Association, Brooklyn, N. Y.

February 26-28—First show at Charlotte, N. C.

February 26-29—Annual commercial exhibit; Cincinnati Automobile Dealers' Association, E. A. Krause, secretary, Cincinnati, Ohio.

February 26-March 2—Show at Paterson, N. J.; Paterson Automobile Trade Association.

February 26-March 2—Second annual show Elmira Automobile Club, L. Blumenstein, manager, Elmira, N. Y.

February 26-March 2—New Haven, Conn., annual show.

February 26-March 2—Show at Sioux City, Ia., of Sioux City Automobile Dealers' Association.

February 26-March 3—Mississippi Valley show, Quincy Automobile Club, Quincy, Ill.; Harry F. Hofer, director.

February 28-March 1—First show New Bedford, Mass.; D. D. Corbett, manager.

February 28-March 2—Annual Davenport show; Woodworth Clum, manager, Commercial Club building, Davenport, Ia.

MARCH

March—Show at Norfolk, Va.

March 2-9—Columbus, O., show; Columbus Automobile Club.

BOSTON

March 2-9—Pleasure car show, Boston; C. I. Campbell, manager.

March 4-9—Show at Des Moines; C. G. Van Vliet, secretary, Des Moines, Ia.

March 4-9—Show at Reading, Pa.

March 4-9—Show at Newark, O.

March 5-6—Show, Madison, Wis.; Madison Automobile Dealers' Association.

LOUISVILLE

March 6-9—Fifth annual show at Louisville, Ky.; Louisville Automobile Dealers' Association.

March 6-9—Advertisers' motor show, Tiffin, O.

March 11-16—Show at Cedar Rapids, Ia.; M. P. Beck, manager.

DENVER

March 12-16—Show at Denver; G. A. Wahlgren, manager, Denver, Colo.

March 12-16—Show at Syracuse, N. Y.; Syracuse Automobile Trade Association; Syracuse, N. Y.

March 13-20—Show of Boston Commercial Motor Vehicle Dealers' Association, Mechanics' building, Boston; C. I. Campbell, manager.

March 25-30—Tent show at Indianapolis, Ind.; Indianapolis Automobile Trade Association.

Americans Find Opening in Belgium

Recent Show in Brussels Participated in by Four Yankee Concerns Exhibiting Ford, Reo, Flanders, E-M-F and Mitchell—Apparently Time Is Ripe for Invasion, for United States Cars Are Meeting European Competition

By Marc Braun

with so favorable a decision as to their qualities.

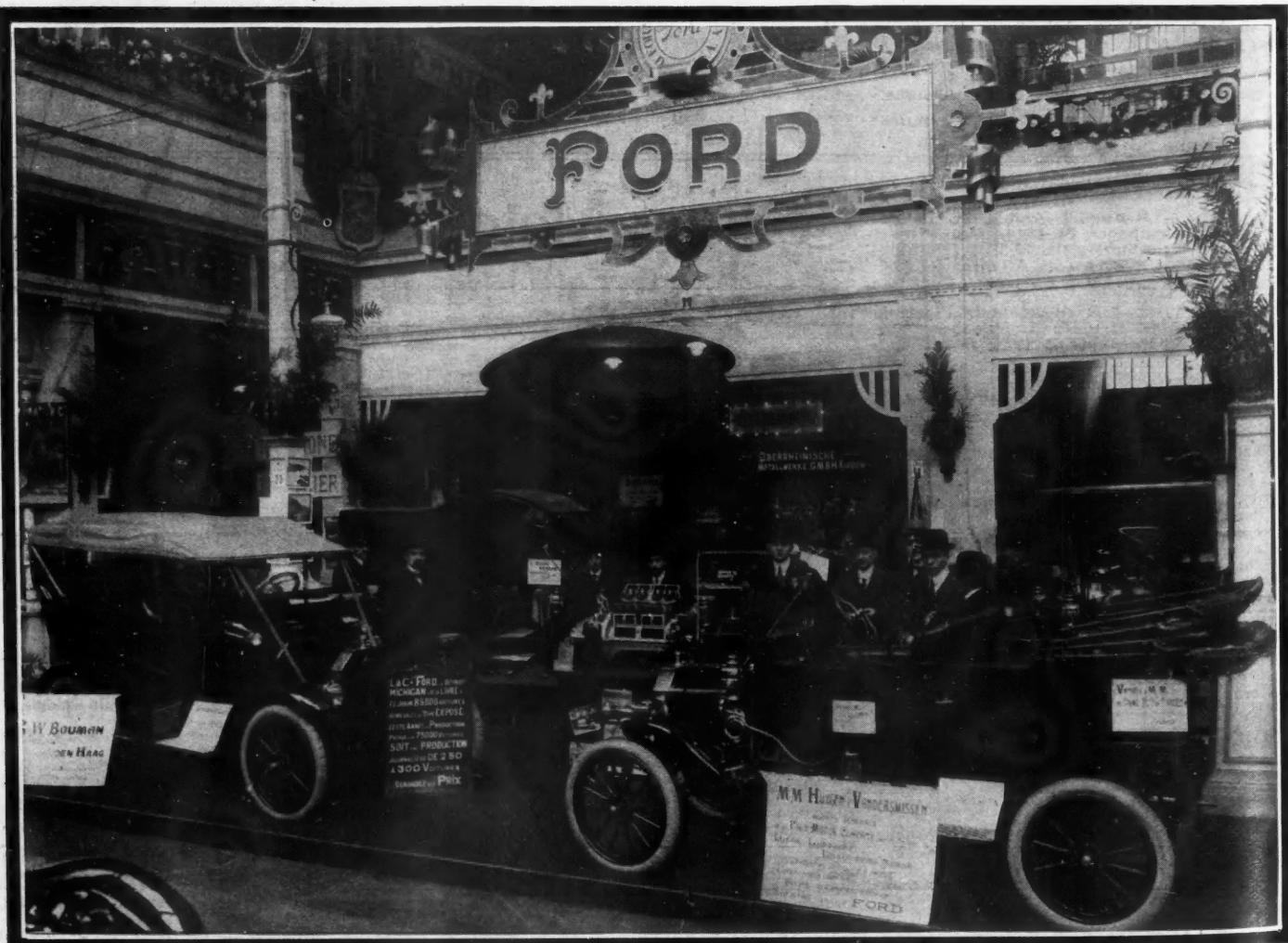
The Ford exhibit consisted of a runabout, a town car, a touring car and a delivery car, in addition to a number of sectional parts of the motor. The space occupied was entirely inadequate and was crowded every day and all the time. This year's exhibit was conducted by the Belgian agents of the Ford.

American Sales Good

"Sales were very satisfying," said one of the Ford representatives. "Actual sales made during the show probably amount to twenty-five or thirty cars but if we add the business previously under consideration and now concluded and the number of prospective customers, then I believe we may have a right to feel very happy at the future outlook. Of course

we no longer have to demonstrate to the people that we make good cars for little money, a fact which is still a puzzle to some. It has taken much time and much money to show the people the reasons why American cars are not only good but very much so although they cost so much less than most any European cars of about a similar class, of about same horsepower and size. Our demonstrations on the bad, poorly-paved roads in the Flandre provinces of Belgium have been very conclusive to even the most prejudiced and I dare say that within a very few years our low-priced cars will be very popular in this country."

The Reo display consisted of a 16-20-horsepower touring car and a 10-12-horsepower delivery car. The Flanders and E-M-F exhibit was at a disadvantage, being located in the annex through which, however, everybody going into and out of the show passed. However this annex was



AN AMERICAN EXHIBIT IN THE BELGIAN SHOW—THE FORD COMPANY'S DISPLAY

generally cold, and not well lighted. The exhibit was made by the International Automobile Agency of Paris, and consisted of two E-M-F cars and two Flanders.

The Mitchell stand was one of the largest and best located of the salon. There were shown a six-cylinder 18-22, a four-cylinder Getabout for two people and a four-cylinder touring car, both of 12-14 horsepower.

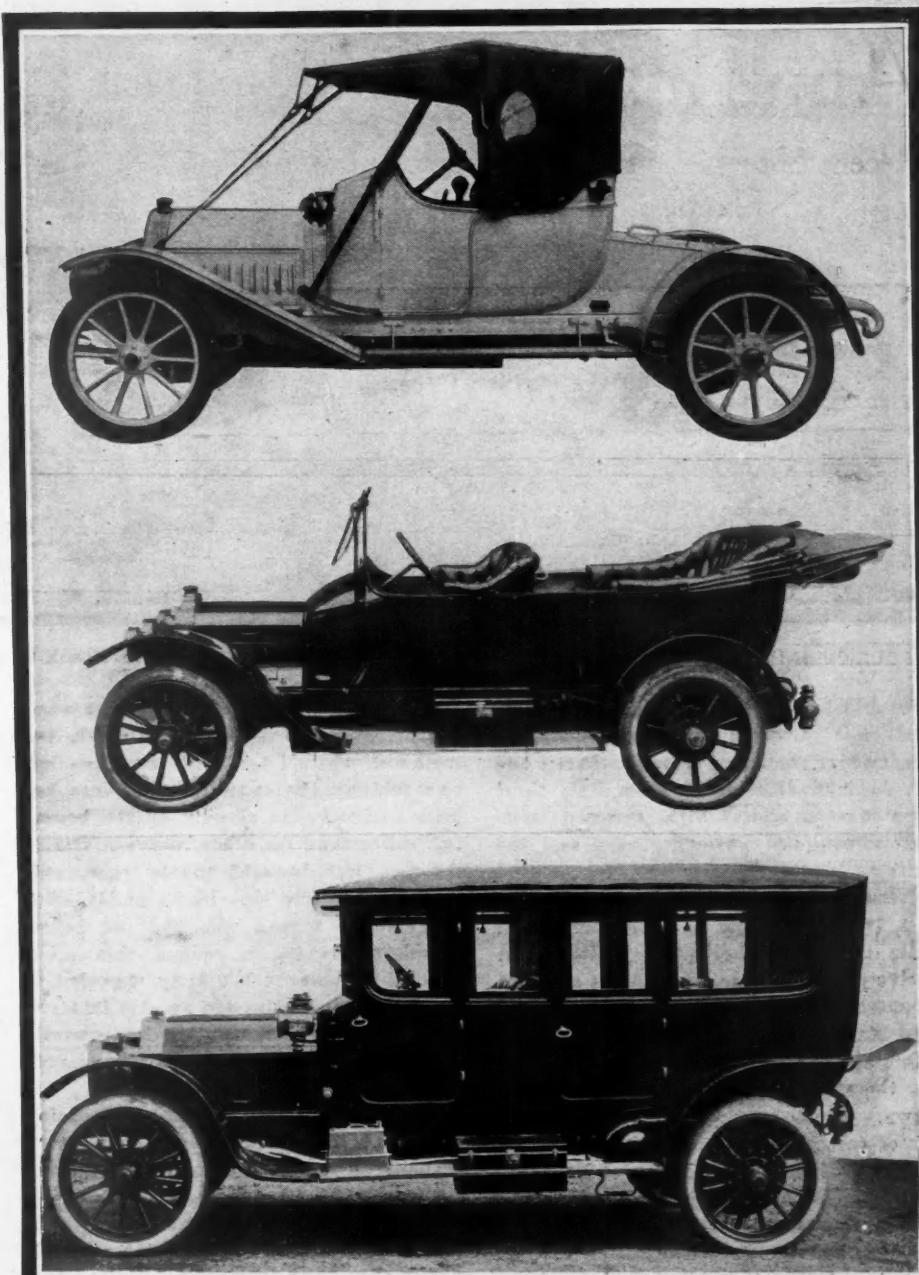
Mitchell's European Business

Speaking of the business in Europe in a general way, one of the Mitchell representatives at the show said: "Great Britain is of course our best customer, but we are beginning to make fair headway in France and elsewhere in Europe. To sell 200 to 300 cars a season in England seems pretty good but when one disposes of fifty or more cars in France during the year it is almost better, for it is more of a proposition to sell to the French than to the English. The latter no longer are so prejudiced against the American motor car and give us credit for making really good cars cheap. In France the anti-American feeling so far as motor cars is concerned is still very strong and will require hard work to overcome. As a matter of fact it probably never will take place because the French patriotic feeling cannot be overcome. They realize, however, that we have come over here to do business and they know that when we mean to get it we will fight for it. Our weapons are like their own, our product, and we are not afraid to have it compared in any way with theirs.

"Through road tests and other demonstrations we gradually are convincing the more skeptical that we in America do as well and better on such large scale as to make our moderate prices possible. And this low-price matter question for high grade and powerful cars is one of the 'don't understand it' puzzles to the good Frenchmen. Our constructing of specially-designed cars for European road conditions is a strong argument for us and is being appreciated. It certainly will tend to increase our business chances."

Tip for Yankee Makers

An American visitor in speaking about the American display said: "Our manufacturers when taking part in European shows should make it a rule to secure choice stands. When one notices concerns of little means with a yearly output of fewer than 350 cars occupying the best stands while a concern with an output of 10,000 cars and more occupies space where the floorwalkers yell 'this way out,' then it makes one wonder. It cost quite a good deal to take part in a show but it costs more to have a poor stand, to be poorly located, to be almost unseen, than to have an expensive space where the people come and see your goods. Then, too, the American makers must bear in mind the prejudice against their cars



TOP ILLUSTRATION—FOUR-CYLINDER F. N. 10-14 HORSEPOWER. MIDDLE ILLUSTRATION—12-HORSEPOWER PIPE. BOTTOM ILLUSTRATION—30-40 HORSEPOWER F. N.

and by showing them conspicuously they will do much to overcome the feeling. Show well or not at all should be their motto.

"I heard overheard one French car's agent say: 'It cost that American concern more than \$700 just for its space alone and it has not yet sold a car in this country.' 'And what does it cost you people,' asked another man. 'We have to pay only 200 francs—\$400—for our stand.'

"'And are there many people visiting it and are you doing business?' asked the other man. 'No, but so it was last year.'

"'Well,' said the second party, 'you see how many people go and look at that American display over there. They are going to sell some cars, mind me. If they were in your little corner they wouldn't.'"

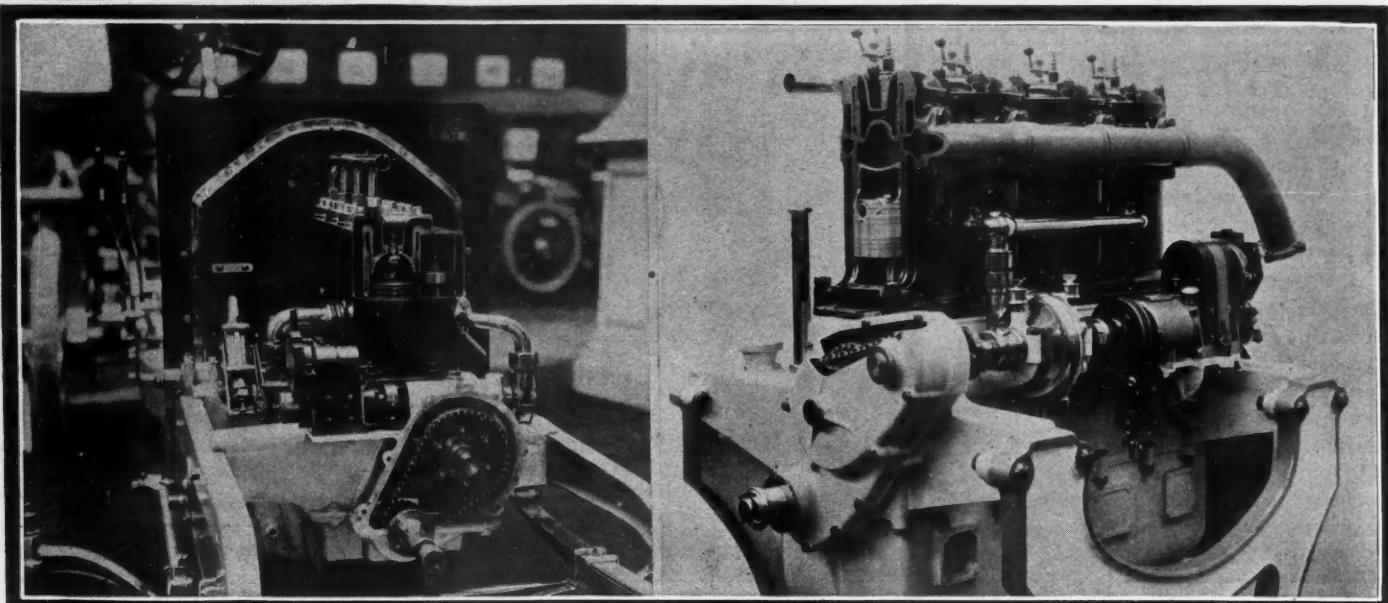
As usual all the best known cars were

shown. Newcomers were plentiful, those from France being Motobloc, Georges Roy, Pilain, Napier from Great Britain, Opel from Germany, while the E-M-F, Flanders and Reo made their first bow for America. Among the old time exhibitors that were absent, the most conspicuous were de Dion-Bouton, Darracq, and the Delaunay-Belleville.

Total Cars Shown, 346

There were displayed 238 fully equipped cars, twenty-two commercial and industrial cars and chassis and eighty-six passenger vehicle chassis—all told 346. Of this number there were 322 four-cylinders, sixteen six-cylinders, four two-cylinders, three one-cylinders and one an electric.

The eighteen Belgian manufacturers showed 109 pleasure vehicles, twenty-six chassis and four commercial vehicles. There were twenty-seven French makers with seventy-one passenger cars, forty-



FOUR-CYLINDER 20-HORSEPOWER MIESSE PISTON-VALVE MOTOR TWENTY-SIX-HORSEPOWER KNIGHT MOTOR ON MINERVA

five chassis and ten commercial vehicles. The five German concerns exhibited twenty-four passenger cars, six chassis and one commercial vehicle. From Italy there were five exhibits with thirteen completely equipped passenger cars and ten chassis. Great Britain was represented by four concerns with eight passenger cars, two chassis and one commercial car, while the four American exhibitors had twelve passenger cars, two chassis and two commercial cars to show.

Few Six-Cylinders Shown

One of the striking features of the show was the small number of six-cylinder cars shown. From among sixty-three exhibitors of cars only nine presented that type, they being Excelsior and Pipe of Belgium, Motobloc, Renault, Delage and Clement-Bayard of France, Daimler and Napier of England, and the American Mitchell. One Belgian concern, Germain, which used to make sixes now is devoting all it's time to fours.

The majority of Belgian manufacturers are bringing out three or four models this year. The Pipe and Germain concerns, as formerly, have the largest line, the former consisting of seven models, and the latter of eight. Cars of very great power, that is above 40 horsepower, are becoming rare, the tendency being to moderate horsepower, from 10 to 20.

Block Motors Popular

The block motor has been adopted by practically all the makers, although a few have not changed their construction during the last few years. Only one concern still makes motors with the cylinders cast separately and even this old house, Germain, has now brought out a block engine.

This is the fourth year the Minerva concern is making the Minerva-Knight motors and the third year since which every one of its cars is being equipped with it.

There can be no question but that the

Belgian body makers are doing fine work, are bringing out splendid bodies. In two instances the Motor Age correspondent was told by the exhibitor that cars had been sold more on account of the beautiful bodies than for other reasons. One of the two was brought to the show only three days before the closing of the salon and sold to a man who had not before considered buying a car of that make but did so because the body appealed to him. Torpedo bodies are greatly in style, and especially among the low-powered small cars there were some of very neat design.

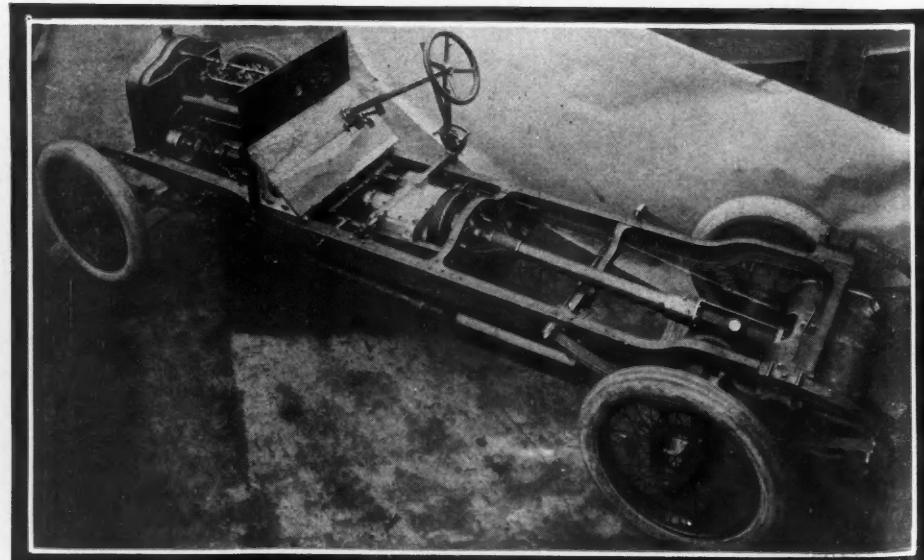
That the foreign car makers are doing a thriving business in this little country can be seen from the fact that two-thirds of the exhibitors are from other countries. France, as always, takes the leading part and also does the largest business. Such cars as the Peugeot, Renault, Berliet, Panhard and Brasier sell well; in fact, the

French cars sell so well that the Belgian manufacturers are becoming worried. The Germans also are making headway, as are the Italians. These foreign cars as a rule are much more expensive than the national products and are in ever increasing demand among the wealthy class.

The commercial car and chassis display was by no means as important as it ought to have been. Although many of the Belgian pleasure vehicle makers also build utility cars, few showed any. This was due to lack of space.

Two Interesting Exhibits

There were two exhibits of more than ordinary interest, however—one of the Auto-Mixte, the other of the Robinson concern. This latter showed an electric power truck, while the Auto-Mixte had a specially constructed vehicle to carry aeroplanes, a military or army transport vehicle and a sort of house car. The Albert Bovy concern showed delivery and truck



CHASSIS OF 26-HORSEPOWER FOUR-CYLINDER MINERVA

STATISTICS OF BELGIAN CARS*

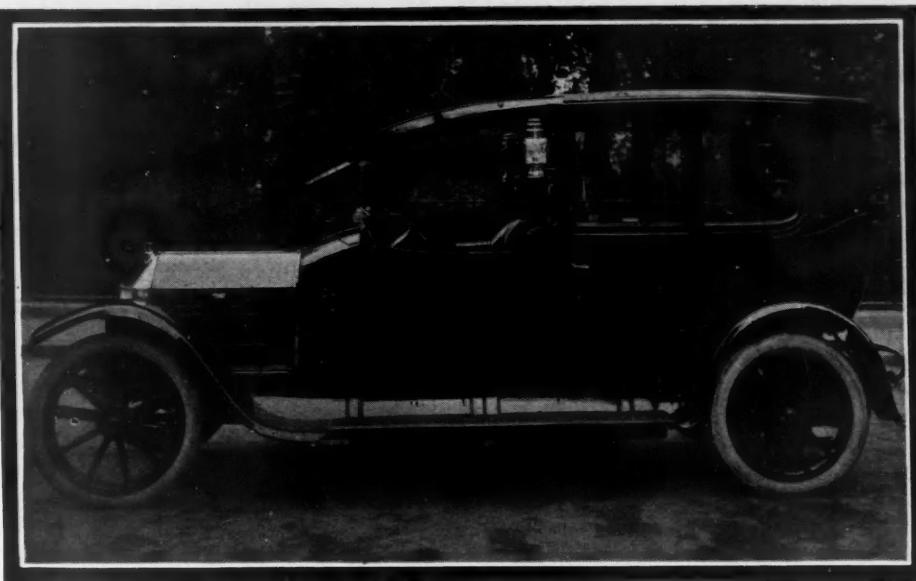
Name—	Horse- power	Cyls.	Bore	Stroke
Metallurgique	.14	cast	3 1-8	by 5 1-8
Metallurgique	.18	block	3.6	by 5.5
Metallurgique	.26	pairs	4	by 5.9
Metallurgique	.40	pairs	4.9	by 5.9
Minerva*	.16	pairs	3.1-8	by 4 7-8
Minerva*	.26	pairs	3 15-16	by 5.5
Minerva*	.38	pairs	4 7-8	by 4 7-8
Pipe	.12	block	2.09	by 4 5-16
Pipe	.16	block	3.1	by 5.9
Pipe	.18	pairs	3.6	by 4 1-8
Pipe	.24	pairs	3.9	by 7
Pipe†	.30	pairs	3.6	by 5.5
Pipe†	.40	pairs	4 1-8	by 4.9
Pipe	.80	pairs	5.5	by 7
Germain	.15	block	3 1-8	by 5 1-8
Germain	.12	separate	3 3-8	by 4 5-16
Germain	.14	separate	3 5-8	by 4 5-16
Germain	.18	separate	4	by 4 5-16
Germain	.20	separate	3.6	by 5 1-8
Germain	.28	separate	4.7	by 5 1-8
Dasse	.12	pairs	2.9	by 3.9
Dasse	.16	pairs	3.6	by 4 5-16
Dasse	.24	pairs	4 5-16	by 5 1-8
Dasse	.40	pairs	5 1-8	by 5.5
Springuel	.12	block	2.9	by 3.9
Springuel	.16	block	3.6	by 4.7
Springuel	.28	block	4 1-8	by 5 1-8
Excelsior	—	block	3 3-8	by 5 1-8
Excelsior†	—	threes	3 3-8	by 5 1-8
Imperial	.12	block	2.9	by 3.9
Imperial	.18	pairs	3.6	by 4.7
Imperial	.28	pairs	4 1-8	by 5 1-8
F. I. F.	.8	block	2.4	by 3 15-16
F. I. F.	.12	block	3	by 4.7
F. I. F.	.16	block	3	by 5 7-8
Miesse	.14	block	3 1-8	by 4 5-16
Miesse	.15	block	3 1-8	by 5 1-2
Miesse	.20	block	3.6	by 5 1-2
Hermes	.8	block	2.5	by 4 5-16
Hermes	.16	block	3.5	by 4.7
Vivinius	.10	pairs	3	by 4 5-16
Vivinius	.16	pairs	3.5	by 4 5-16
Vivinius	.24	two	4 1-8	by 4.7
S. A. V. A.	.10	block	2.5	by 4 5-16
S. A. V. A.	.14	block	3	by 5.5
S. A. V. A.	.18	block	3.25	by 5.5
Guerre	.10	pairs	2.9	by 3.5
Guerre	.18	block	3.25	by 4.7
Guerre	.30	pairs	4 1-8	by 5.5
Nagant	.10	pairs	2.75	by 4 5-8
Nagant	.14	pairs	3.6	by 4.7
Nagant	.18	pairs	3.6	by 5.8
Nagant	.24	pairs	4 1-8	by 5 1-8

* Non-poppet valve motors

† Six-cylinder models

wagons, while the Berliet, Lorraine-Dietrich and Delahaye concerns showed vehicles which took part in the French army trials.

There are fifteen different makes of Belgian cars which recently exhibited at the Brussels show. These cars are interesting to the American manufacturer in that they furnish to him some criterion of the type of vehicle best suited for the Belgian market. In the table given above is the horsepower together with the bore and stroke and type of cylinder used by the different makers. A most important feature noticed in a cursory analysis of this tabulation is the number of low-powered vehicles manu-



METALLURGIQUE 26-HORSEPOWER TORPEDO LIMOUSINE

factured, the smallest being the Hermes rated at 8 horsepower and having a cylinder of but 2.5 inches. A car which is a little smaller than this is the F. I. F., with a horsepower rating of 8 and having its four-cylinder block motor with 2.4 by 3 15-16 bore and stroke. This little car is fitted with a torpedo runabout body and is listed at \$750. It has a three-speed gearset and weighs 935 pounds.

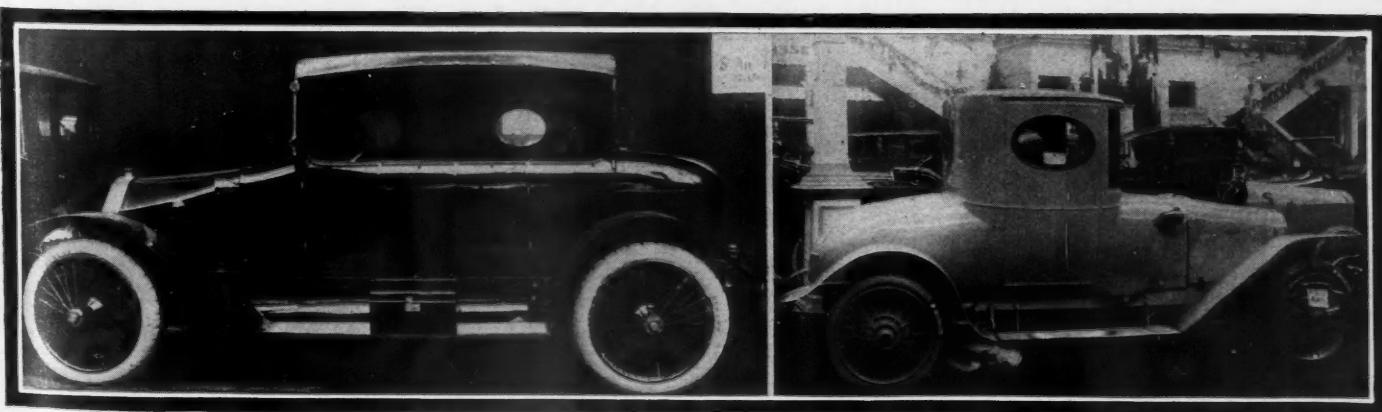
Another characteristic of Belgian cars is the few six-cylinder models manufactured, there being only three listed in the entire country. Two are Pipe models of 30 and 40 horsepower respectively, and the third is an Excelsior with its cylinders cast in groups of three.

Belgians in Non-Poppet Field

The Belgian manufacturers were among the first to take up the non-poppet valve idea, the Minerva company securing the Belgium license for the Knight sleeve-valve motor. This company has been manufacturing this exclusively for 3 years and produces it in three models, 16, 26 and 38 horsepower. Another manufacturer of non-poppet valve motors is the Miesse, which last year brought out a piston-valve type. This motor is used only in the 20-horsepower model, the com-

pany building 14 and 15-horsepower models with poppet-valve type motors.

A conspicuous characteristic of nearly all Belgian cars is the use of the four-speed gearset which has come into general use on small as well as large cars during the last year or so. A few examples will show the extent to which this construction is carried. The Metallurgique used the four-speed gearbox on all of its four models, which range from 14 to 40 horsepower. All three of the Minerva models employ it. The Pipe company, building not fewer than seven models, employs a three-speed set on its 12 and 40-horsepower models and four-speeds on all of the others. On the Germain models the three-speed set is fitted on the 12, 14 and 18-horsepower models and either three or four on all of the others; the four Dasse models have three-speed sets; all of the three Springuel models employ four-speed sets. The two Excelsior models use a three-speed set; in the three Imperial types the 12-horsepower uses a three-speed set but four-speed sets are used on the 14 and 28; all three F. I. F. models are fitted with three-speed sets but an option given on four-speed sets at an expense of \$30. On the three Miesse models the three-speed design is standard.



A VOITURETTE TORPEDO AND A 12-HORSEPOWER SPRINGUEL TORPEDO

Southland as Seen Through Show Specs

On the Hermes models a small type uses a three-speed set, the large model a four-speed set and this same rule holds good with the S. A. V. A., and Nigant. The Guerre employs a four-speed set throughout. This enumeration serves to show that economy of gasoline is one factor with nearly all Belgian cars.

The long-stroke motor has been taken up with as much vigor in Germany as it has in England and France, in fact, there is not a solitary model listed in which the square motor is used. The smaller the motor the longer the stroke in proportion to the bore. The long-stroke argument is well established throughout Belgium and American manufacturers will have to meet it either by producing the goods or superior demonstrations.

Some Mechanical Features

On the Metallurgique cars thermo-syphon water circulation is used in connection with a V-shaped radiator. The cylinders are offset and in lubricating the motor oil is forced to the bearings and recirculated. On the 14-horsepower model a spring drive has been introduced in the propeller shaft. It consists of four-coil springs mounted on guides, the guides holding the springs in position under all conditions. In starting any jar is eliminated by compression of the springs. By using this a lighter gearset is possible.

The Minerva cars are using the automatic spark advance magneto. They also are shown with worm-driven rear axles for the first time and are further giving an option on wire wheels.

The Pipe company builds both four-cylinder and six-cylinder cars. On the 12-horsepower four-cylinder motor the valves are mounted at an angle of 45 degrees. This same construction is used in the six-cylinder cars rated at 30 and 40 horsepower.

The Germain company has discontinued the manufacture of six-cylinder models and with one exception, namely in its 15-horsepower model, used separately cast cylinders throughout.

Thermo-Syphon Cooling

The use of thermo-syphon water circulation has gained very perceptibly during the last year. Some manufacturers look upon this as a reduction in the cost of manufacture in that it eliminates the water pump. Much progress is shown in the use of the automatic advance on the magneto, some of the concerns making use of this being Minerva, Germain, and several of the smaller makes.

Taken altogether, the show was a most interesting one, as Belgian exhibitions always are, the remarkable feature being the display of American-made cars, as mentioned at the beginning of the article.

Opening of Atlanta Exhibition Gives Reviewer Opportunity to Discuss Trade Conditions in His Section of the Country —Dealers Turn Out in Full Strength to Study Cars

By Percy H. Whiting

and dealers to wondering about the trade conditions here.

That there was not anything the matter with trade conditions in 1911 is evident from the fact that the increase in registration in the states of Georgia, Alabama, Florida, North Carolina, South Carolina, Virginia, Tennessee and Kentucky was—according to unofficial figures—52 per cent. Making some slight allowance for duplicate registration it is still very evident that the number of cars in the southeast was increased in 1912 by half.

When it is further considered that thirteen of the country's car factories, or about 3 per cent, are located in the southeast and that virtually all of them—with one or two exceptions of note—are tiny affairs and therefore that the southeast does not produce anything like 3 per cent of the cars it consumes, it becomes apparent that the section is one in which the manufacturer is licensed to be interested. When it is still further recognized that more than 99 per cent of all accessories, parts and the like is made outside the south it is easy to see that the south is a field in which there will be no home competition.

That it is not quite the fertile field that it might be, owing to the continued low price of cotton, is admitted, but for all that it will consume its fair share of cars in 1912, in proportion to its population and its wealth.

Georgia stands out as the big motor state of the south. On January 1, 1911, 5,532 cars were registered in the state. One year later there were 12,368. Owing to Georgia's law there is a considerable duplicate registration but certainly more than 5,000 cars were sold here in 1911.

Official figures for Kentucky are hard to obtain as the official year begins July 1. On July 1, 1911, 3,155 cars were registered in the state. T. S. Bryan, state clerk, estimated that by July 1, 1912, there will be over 4,000.

Count in Tennessee

In Tennessee, where the centralization of much of the population in or near four cities of considerable size makes it possible to cover the selling field rather well, there were 4,253 cars registered January 1, 1911. One year later there were 6,641, an increase of 56 per cent.

In Virginia 4,020 cars were licensed during the year 1911 and the estimate of H. O. James, secretary of the commonwealth, is that the number will run to 4,500 this year, a modest enough increase.

A most amazing gain was shown last

Cotton Prices Affect the Car Market

Peculiar Selling Conditions Exist in Southeastern Field—Growth of Business in Kentucky, Tennessee, Virginia, Alabama, Florida and South Carolina

year in North Carolina. According to figures furnished by W. S. Wilson, corporation clerk in the office of J. Bryan Grimes, secretary of state, January 1, 1911, there were 2,167 cars registered. January 1, 1912, there were 3,890, a gain of 1,723, or virtually 71 per cent.

The only figures available in Alabama, according to a communication from Cyrus B. Brown, secretary of state, are those of present registration. This is 3,195. Unofficial figures give 42 per cent increase for 1911.

Another amazing advance was shown by Florida, a state that makes up at present in prosperity what it lacks in good roads. Official figures furnished by the secretary of state give the registration at the beginning of 1911 at 2,395, and for the beginning of 1912 as 4,211. This is an increase of about 76 per cent.

South Carolina's Showing

No official figures are available for South Carolina, as there is no state registration, but unofficial figures give the advance as from 2,394 on January 1, 1911, to 3,889 on January 1, 1912.

A careful canvass of the southeastern field finds conditions much the same as they have been all the fall and winter. Cotton is still down, but it is not now at its lowest ebb and there are many who hope to see it go materially higher shortly.

The question of whether or not this will result in a falling off in general selling conditions, or whether it will chiefly affect the high-priced cars or the low-priced ones, can not be determined as yet and the southeastern market is in a freakish condition. There is a heavy demand for certain sorts of high-priced cars and for certain makes of low-priced cars, while other high-priced cars and other low-priced cars, apparently as attractive in every way, are not selling well at all—which leads to the suggestion that perhaps the matters of salesmanship, advertising and service are entering into the selling end of the business more than they used to.

Conflicting Views Held

Here is a fair sample of the conflicting views.

J. E. Levi, new southeastern representative of the Premier, who has just covered much of his field, says: "It is apparently a high-priced car year. I find high-priced cars of all sorts selling well all over the southeast. Low-priced cotton has made money scarce among people of moderate means but the rich always have money to buy cars."

Manager R. S. Abbott of the local Ford

branch says: "We are way ahead of last year's business and expect to do nearly three times as much this year as we did last. We attribute this in part to the fact that money is tight and a lot of people who might have bought \$2,000 to \$4,000 cars if cotton had been at 15 cents are taking Fords."

Taking the other slant and mirroring the opinion of many southern dealers and branch managers, E. P. Horton, manager of the local branch of the United States Motor Co., says: "Conditions are not as good as they were a year ago. The average dealer is not selling any more cars than last year and a few are selling fewer."

All of which leaves one in considerable doubt as to the exact conditions but it is always safe to assume that when cotton is down trade conditions in the south are not specially good.

It is almost impossible to say exactly the price of car in greatest demand. Presumably it is the very cheap car, though the dealers handling machines of \$1,000 to \$1,500 report an encouraging demand.

The touring car holds a long lead over the runabout in the estimation of southern buyers and when there is a choice between five-passenger and seven-passenger cars the latter usually gets the call.

This is not a year when farmers are buying many cars. It is a poor year for farmers, with the cotton crop bringing so little; though in states unaffected by cotton—like Florida, Virginia, Tennessee and Kentucky—the business with them is increasing.

WOULD CONNECT BIG CITIES

Milwaukee, Wis., Feb. 12—The Chicago-Milwaukee Association is effecting a permanent organization, the main object of which will be to repair and improve at least one principal highway between the two cities and keep it in good repair winter and summer, not alone for passenger car traffic, but for commercial vehicles and horse-drawn vehicles.

The project is backed by the Milwaukee Automobile Club and Milwaukee Citizens' Business League from the Milwaukee end, and the Chicago Automobile Club from the Chicago end. Ten miles of road were dragged and repaired last fall and funds are now being raised for a continuance of the work as soon as the weather permits. The association has just held a competition for artists to obtain a good design for a radiator emblem, to be sold for \$5 to motorists who are willing to help the work along. The emblem will at once

testify to the motorists' willingness to share the burden and bring in revenue for the work.

It is estimated that 3,500,000 people would be directly benefited by an improved highway between Milwaukee and Chicago, to say nothing of the diversion of outside pleasure traffic during the summer months from Chicago into Wisconsin. The road will be 92 miles long and follow an old government highway which antedates railroads. It is nearly an air-line and has a solid foundation as the result of years of travel and traffic.

RALLY AWARDS ANNOUNCED

Paris, Feb. 3—Of the sixty cars which travelled from various points of Europe to Monaco in connection with the rally organized by the sporting authorities of that principality, the best was considered to be a 16-horsepower Berliet limousine belonging to Julius Beutler, a member of the German Automobile Club. The Berliet carried four passengers, covered the distance of 1,056 miles at an average speed of 15½ miles an hour, and was considered by the jury to be the most comfortable and the most elegant.

Personal appreciation entered too much in the wards for the results to give entire satisfaction. Thus, in awarding points for comfort and elegance the members of the jury appeared to have a strong preference for inside-steering cars with big plate glass windows. Open touring cars, no matter what their elegance or luxury, did not appear to find favor.

The second car on the list is a Durkopp, owned by Captain Von Esmarek, a nephew of the emperor of Germany. It is also an inside steering limousine carrying four persons. Third place goes to a six-cylinder Delaunay-Belleville, which carried eight persons from Havre to Monaco. The fourth prize was won by a six-cylinder Rolls-Royce limousine, placed first of the Paris contingent. The only American car taking part in the run was an inside-steering Ford which was classed twenty-seventh.

There appears to have been a certain amount of incompetence among the members of the jury on motor matters, for one car was penalized for having changed its spark plugs, while another suffered no loss of points for having changed a radiator at one of the towns en route. During the first year, when the competition was a comparatively unimportant affair, the awards were of comparatively little importance. Now, however, that the competition unites eighty entries, the need is felt for more carefully drawn-up rules and greater competence on the part of the members of the jury. If the run is held next year there must be more satisfactory rules else the event will lose its popularity.

Northwest's Crops Trade Barometer

Opening of St. Paul Show Brings Out Prospects of the Dealers—Dame Nature Promises Much and Car Agents Are Expecting Prosperous Season—Farmer Promises to Be Big Buyer—Other Tendencies Interesting Industry Noted

ST. PAUL, Minn., Feb. 12.—In one of the largest exhibition halls in the west the second annual St. Paul show opened at 2 o'clock this afternoon. It is regarded as essentially a commercial car and a selling show. The enormous floor space permits a remarkable showing of heavy commercial cars, with yet great room for pleasure cars and sundries.

Decorations of the Show

The Auditorium covers half a city block and at least 85 per cent of that floor space is available for such exhibits as are shown this year, on the main floor and in the lobbies and foyers. The theater portion was released after a Sunday afternoon orchestra concert and immediately work was begun to lay a floor over the seats making one big level floor space from one street to the other.

The hall is decorated with imitation mosaic arches, lighted from overhead by forty drops. The exhibits represent about \$600,000. One hundred passenger cars are shown and fifty trucks, and are made by fifty exhibitors. The decorations cost \$3,000. Manager W. R. Wilmot of Minneapolis has nothing on which to base an attendance figure as the show business is new to St. Paul, but the railroads have given a rate of one fare and one-third from points in the state for the three Twin City shows which promises 50,000 attendance. The city attendance is large and numbers have arrived from the smaller towns of the state. The attendance of the dealers is large, as they are taking opportunity to post themselves in changes in the car models and to make new contracts and to sign up for their 1912 specifications.

One-half the net proceeds of the show will go to the St. Paul Automobile Club toward the building fund.

Crops a Big Factor

As the crops so is the motor car business. This is the axiom of branch managers, agents and retail dealers in the northwestern states of Minnesota, the Dakotas, Montana, and the northern parts of Wisconsin, Iowa and Nebraska, in attendance at the show. As the prospect for crops is good the dealers look for a good business in motor cars.

The chief reason for a good crop expectation is the moisture situation, that key to the crop business. Lack of moisture played a damaging part in the harvest results in spots in the section named in 1911. Barring untoward circumstances that difficulty has been obviated by unusual meteorological conditions of the fall and thus far this winter.

By J. E. Smith

Rains preceded the freeze-up, and the rains were general. The freeze-in process held this moisture in the soil, yet did not freeze deep or unusually solid. This moisture is doing work through the winter, and on top has come a great amount of snow which melting is expected to percolate through the soil in the spring. The usual nature method in the district is for thaws and freezes to alternate in the spring until the moisture had been dried up. This prevents running off in streams and causing overflow of swamps and rivers. If the usual process is followed in the spring in the territory the start of the crop is to be under unusual circumstances. A good crop will offset losses last year.

The Year in Crops

These losses were in spots. South Dakota as a whole is not expected to prove a good motor state until it has redeemed its loss of last fall by good prospects. Western North Dakota presents a similar situation. Diversification of crops, the carrying of the corn belt into North Dakota, the growth of the stock raising and creamery business, the campaign of the bankers to make the farm more popular and the intensive education so active in the state agricultural school and farmers' institutes as well as by traveling exhibition and educational cars, all have tended to make 1912 a safer year against loss by poor crops. Where corn may fail the farmer is going to profit by his other kinds of grains or his stock and horse and cattle business. As the farmer profits, so he buys motor cars. Another factor in making 1912 a good motor car year is the tremendous stride in good roads building, which makes the motor car a more desirable possession for the farmer. The move to consolidate the rural schools in counties is also a growing factor toward popularizing the motor car for conveying the children from their homes to the school and back daily.

As to South Dakota there is an optimistic note over the crop situation. Bankers recently convening from all over the state at Huron said that there will be a demand from a few parts of the state for money for seed for the coming planting, the people are not seriously inconvenienced, and they are hopeful for a good crop year. Ample seed is to be provided for those who cannot get it, and thus a full planting is assured.

In various parts of Minnesota and North Dakota the farmers have enough money laid by from previous good years

to carry them through. Most of the Scandinavians have had enough funds to carry them back to the fatherland for the winter. The northwest practically finances its own crop now so that most of the farmers have bank deposits against which they can draw when they find they must get into line and buy motor cars to get into competition with their neighbors. The cars are used for scientific management of farms instead of horse-back trips and the farmer is finding it almost impossible to be without machines, where the roads allow their use, without the means of getting to town.

The state highway commission is preparing to build several truck lines through the state and private associations are making laterals so that in another year Minnesota, especially, will be ready for travel by motor car in any direction. The same is true of North Dakota and a line is under contemplation from the twin cities to the South Dakota border at Browns Valley. A Canada-Gulf line is in project also through Iowa and the Dakotas.

Secretary J. G. McHugh of the Minneapolis Chamber of Commerce, the trading place of the greatest primary wheat market of the world, says the crop outlook today is excellent because of the abundant moisture and that if these conditions do not change, but progress is favorable through the season, a good crop is probable.

Agricultural Expert Talks

Dean A. F. Woods of the state agricultural college, a crop expert formerly in government service, says in part: "The present condition of the farm lands is good. I look for an exceptionally good year for Minnesota farmers. The heavy snows will insure sufficient moisture for those parts of the state that may suffer from lack of snow in the spring, and the cold weather has had a favorable effect on the soil. It kills insects that are injurious to grains and freezes the ground so that it will open up better in the spring and permit exposure to the air. After the planting the crop will thus have a better growth. Those farmers who selected their seed early will have a vigorous growth. We look for material increase in the corn acreage and also of wheat; and flax, barley and oats will hold their own. The farmers generally have taken up the idea of crop rotation which will serve to increase the yield."

The prospect for motor car business is therefore said by principal dealers to be better than in 1911, which was as good a

year, at least, as 1910. Each year has shown an increase, some lines showing a gain of 25 per cent or more, and a gain for 1912 of from 25 to 35 per cent expected by standard companies in the business.

As to price, the car selling at a medium rate is the favorite in the territory, and the commercial car business is growing with great strides, as well as the electric car trade in the cities with paved or good natural streets. Owners of electric cars have ventured farther than usual, in the last 12 months, from charging stations with no bad results, in the case of Minneapolis even to Lake Minnetonka, 10 miles distant; and, in the case of St. Paul, to a similar resort at White Bear, about the same distance.

Big Car is Popular

The big car seems to be no more than holding its own, and instead the car priced at from \$1,000 to \$2,000 is selling better because so many owners are discovering that they get as good results, and at less cost, in operating the serviceable cheaper machines. The limousine is selling easily, some of the richer investors taking elaborately upholstered and equipped machines, but the great majority who buy above \$1,000 are this winter using touring cars protected by the ordinary wet weather tops and sides. The use of cars in winter has been more general this season and hundreds of owners have simply driven their summer machines instead of buying limousines, or inclosed bodies for the same chassis.

The car that sells below \$1,000 is gaining vogue because the lower prices have attracted hundreds who feel they cannot spend more than that maximum and who want cars to take advantage of the fine boulevards and improved country highways. A great demand is coming for the cheaper cars also from the farming districts. The farmers are more easily shown the value of the motor car when the price is within what they term reason, and like as not they are easily led to pay even more for the second and third cars. The popular farmers' car is the straight four or five-passenger touring car of light type. The combination body which permits the transformation of a touring car into a commercial wagon has not proved a great selling success. The pleasure possibilities are now proving the attractive ones, as the farmer is no longer isolated, but can attend church in the evening, go to socials in adjoining villages and make calls and yet get back for the night, something impossible with the old horse conveyance.

Demand for Runabouts

In the cities there is still a class of sportsmen who are buying the racing tourabouts and the cars which make big show and speed, but this class is not growing noticeably, it is said.

Another class of city purchasers of runabout cars is the wholesaler and

VIEWS FROM NORTHWEST

The northwestern situation is summarized by branch managers as follows:

W. P. King, Hudson & Thurber Co.— In 3 days after we announced our agency for two new cars we received 300 inquiries. If half the persons asking about cars this month buy, the factories can send their entire output to the northwest. I never saw prospects brighter. I believe these conditions will last through the year. The all round service car is the seller, ranging from \$1,300 to \$1,600 in price.

B. F. Stimson, manager United Motor Minneapolis Co.— I believe the dealers will do a better business than ever before. When dealers are taking orders as they are in zero weather and delivering machines, business conditions must be unusually good. We are shipping goods every day and look for increase. We are preparing for the big rush on the moderate price serviceable car. Business conditions are apparently good in the west. I cannot remember a season opening so well.

George B. Levy, manager Minneapolis Hudson Automobile Sales Co.— This agency has done better business in the last 6 months than in the 12 preceding that period. The outlook is for good business as inquiries are coming in well. I have never seen better conditions. The medium car is going to more than hold its own, because more people have money to buy such a car than a higher-priced one.

J. L. Campbell, manager Colby Motor Car Co.— I look forward to a record business for the year. We already have done more business than we expected and we are planning to handle a large business for 1912. Our five-passenger car is to be the leader with us. Crop promises are fairly good. Agents are already sending in orders.

A. C. Duckett, manager Anderson Electric Car Co.— Our company has done better business thus far than last year and we expect a greater increase. Twelve cars were delivered in January. In fact we look for unusually good business in the electric line, with the brougham as favorite.

V. E. Morris, P. J. Downes & Co.— The outlook is for a prosperous year throughout the west, according to our agents, and I think the business is to have one of its record years. Agents' reports forecast big business for 1912. Our leading car will be the Cross Country, five-passenger. The moderate price and all service car is to be the big seller this year.

F. R. Barlow, manager Olds Motor Works.— The outlook is good for a big business through 1912. More cars will be sold of fairly high price. I think cars are at rock bottom prices now and that next year they will be higher, if anything. We are getting orders all the time and I think the business will increase as the weather moderates.

W. J. Bowman, manager Northwestern Automobile Co.— We expect the largest business we have ever had and are buying on the strength of the moisture we are sure of. The farmers say there is enough of this moisture to last until June, which usually means a good crop. We sold more cars in one state in January than in the entire year of 1911. With 300 dealers we expect to place 1,500 cars. The five-passenger car will sell with our trade, making at least half the sales. The remainder will be at \$1,200 and \$1,500.

manufacturer for their traveling men, who by motor car can cover several more towns a day than when they had to depend on slow trains, infrequent railroad service or even freight trains got over only a portion of the same ground in a week. The traveling expenses are therefore reduced and a saving is made.

The commercial car situation is a questioning one. Hundreds of trucks and light deliveries already are in use in the cities and other dealers still using the horse truck are investigating and studying costs. The result is that the commercial end of the three Twin City shows is the

important one. Lumber firms are getting to use the heavy trucks, and also the transfer companies. The average large store, laundries, express companies, and business requiring delivery are generally adopting the commercial car or the truck.

Good Business in Twin Cities

As a whole the dealers in the Twin Cities are reporting good business. The big firms which handle several lines of cars are especially happy over the situation. Because of the necessity of doing a large volume of business to take care of heavy selling expenses the big houses are more and more getting to carry enough lines to hold a customer whether he is like to want a car at \$6,000 or anywhere down the line to \$850, or less. Thus rarely does a customer get away from any one store. The electric firms are also optimistic over their success in getting such a hold on the people. Factory branches are on the gain, replacing agencies, but some of the leading dealers say these are not a great success because if a man is capable of operating a factory branch he is likely to go into business himself or ask a salary that is a great expense to the house. Several factories have made branches in Minneapolis and sub-branches in neighboring cities. The necessity for carrying large stocks and big repair outfits is one of the reasons for the change. The Twin Cities are the great distributing point for the northwest and the saving in freight to the consumer and also of time by establishing large depots in the Twin Cities has been a factor that leads to constant enlargement of the jobbing business here.

One type of car that is growing in favor is the inclosed coupe. Physicians are generally utilizing the closed car for protection against summer and winter weather, as well as contractors, inspectors and others who must get about the streets rapidly. A large gain is noted also in the municipal car business. All the large cities are either putting or contemplating motor cars for their fire department chiefs, the police department, city ambulances as well as fire squad wagons. St. Paul has just put in a new machine of the latter class and Minneapolis is bidding for several new runabouts.

The Second-Hand Business

The second-hand business is a summer trade from the Twin Cities. These cars go to the farmers who do not begin to think about buying until the roads have dried out in the spring. It has grown to be a custom for the patrons of standard lines to use their cars until they are worn out and the second-hand business is not as extensive as in parts of the country.

Owing to the lack of proper registration records the number of cars sold in the territory last year or owned is lacking. Minnesota registered about 20,000 cars last year. North Dakota now has a standard registration system and expects to keep close count. The number, however, is growing annually.

Canadians View a Fine Display of Cars

Montreal Show Attracts Fifty Different Makes—Reports Indicate General Prosperity This Season, Money Being Liberal and Stock Market in Good Shape—Census Indicates Growth of Industry, There Being Twenty New Dealers in the City—Past Year Profitable in Way of License Fees, Quebec Government Realizing \$12,704 in Taxes from the Motorists—More Expected at End of This Year



GENERAL VIEW OF MONTREAL SHOW, INCLUDING HUGE KING EDWARD CROWN

MONTREAL, Feb. 9—The Canadian show which is now on in this city has more than fifty different makes of cars represented as against thirty last year. Nearly all the prominent American cars now represented in the city are on view. There is not a single English model in the show and only four or five French cars.

As far as can be learned very little business is done in the matter of placing agencies at the show, with the exception perhaps of appointing a few new agents in the province of Quebec, as very few exhibitors show unless they already have representation. Retail sales are made wherever possible, sometimes within a radius of 150 miles, sometimes as far as the Maritime provinces.

One of the big features of the show is the enormous union jack, formed of colored lights and covering the entire ceiling. In the center of this flag and directly above what is the center of the exhibition, is hung a gigantic crown, also formed of colored lights. The crown is an enormous affair made of galvanized tin. It stands 14 feet high and is 15 feet in diameter. There are 1,000 8-candle power electric lamps used in the crown alone, while in the large flag there are over 3,000 lights used.

General car conditions in Montreal are all that can be desired and one decided advantage this year is the early date of year's exhibition. This will have the effect of stimulating the interest in motorizing. Canada is assured of prosperous times for some time and there is every reason to believe that the motor industry will share in the prosperity. Money is plentiful, the stock market is in good shape, and judging by reports given out by our various local dealers this is confirmed in every instance.

Current motor car buying in Montreal shows a pronounced trend toward the family touring car. Never before has there been such a strong general preference for cars of this type.

Two distinct factors have been observed in explanation. One is the increasing tendency to regard the motor car as an inseparable part of home life and the other is the element of price. It is well-known that the market movement in the popular-priced division has been affected by many new models embodying higher standards of value for a given cost, and, in some cases, lower prices for a given value.

The sales reported thus far show about an equal proportion of passenger and commercial cars and to the dealers the grow-

ing in favor of the motor traction trucks is an encouraging sign, as it indicates that the industry has in it the backbone which will carry it along even if there is a temporary wane in the popularity of the passenger car at any time.

The number of cars last year around this time, numbered somewhere in the vicinity of 1,000 to 1,200, while the license department states that between 1,600 and 1,700 cars are now in Montreal. The Quebec government last year realized in cash from taxes on motor vehicles the sum of \$12,704, and this will be considerably increased during the season of 1912.

One can count anywhere between fifteen to twenty new dealers in Montreal, which means at least this number of new makes or more, as some firms represent more than one line. The eastern townships, Quebec City, and in some cases Ottawa is included in the territory that Montreal covers as a distributing center, and throughout the province of Quebec sub-agents are appointed in the larger towns.

MUCH BUSINESS AT KANSAS CITY

Kansas City, Mo., Feb. 12—One big show for 1912 has been the slogan of the Kansas City dealers, and one big show it is. This year's show, combining all the dealers, is the largest in the history of the business, and at this writing more

Chicago Shows Big Gain in Attendance

actual sales have been made than at any show ever held in this city. If there is any dealer in Missouri or Kansas that is not in attendance it is because he is home sick. A severe winter it has been in this territory, with plenty of snow and this means big crops in Kansas and Missouri, and big crops mean many car sales. The dealers are very optimistic and are placing large orders for cars at the show. The trend of country business is toward low-priced cars around \$900. The farmer wants a low-priced car because a small-price car will answer his purpose as well as the higher-priced ones. The fore-door is making a great hit in the country, and the farmers are demanding it.

GRAND RAPIDS' OPENING

Grand Rapids, Mich., Feb. 12—The third annual Grand Rapids show was opened in the Klingman Furniture Exposition building tonight. Fifty thousand feet of floor space is in use and this is occupied by twenty-eight exhibitors, showing fifty-nine makes of cars, with a value of \$500,000. There are twenty-one exhibitors showing accessories, using 8,000 feet of floor space.

SHOW AT DAYTON

Dayton, O., Feb. 12—Eighteen local dealers showing seventy-nine cars, fully equipped and ten chassis, representing in all thirty-three different makes of cars comprises the display at Dayton's third show, and the first held under the auspices of the Dayton Automobile Club. Approximately the exhibition is worth half a million dollars. The show opened today.

TORONTO SOLVES SHOW PROBLEM

Toronto, Can., Feb. 12—A commodious annex of all-steel construction finally met the approbation of the insurance underwriters who feared the erection of a temporary structure to take care of the overflow of entries for the show to be held in the armories here February 21-28. The manager of the show claims that the available area will considerably exceed that of Madison Square garden.

GOOD EXHIBITION AT LYNN

Lynn, Mass., Feb. 10—After a week that brought to the city many of the Boston dealers and a big attendance on the part of local motorists the Lynn show closed its doors tonight. There were twenty-seven makes of cars represented there.

PLEASURE CARS ONLY ELIGIBLE

Davenport, Ia., Feb. 12—Owing to the large number of applications from dealers for floor space at the annual show of the Davenport Automobile Club it has been decided to limit the displays to pleasure cars. This will be the last year the show is under the management of the Davenport Automobile Club, as the Tri-City Automobile Dealers' Association, recently organized, will stage the show in the future.

Manager Miles Reports Increase of 20 per cent First Week and 40 per cent During Display of Commercial Cars

CHICAGO, Feb. 12—National shows for the season of 1912 are over, the curtain dropping Saturday night with the closing of the commercial section of the N. A. A. M. display. While the end is greeted with delight by the trade in general, still there is universal satisfaction on the part of those who exhibited, for the shows of 1912 have been more prolific of business than any of their predecessors.

"I am just counting up on the Chicago show," said S. A. Miles, general manager of the N. A. A. M., this morning, "and it is most gratifying to report that the 2 weeks of shows in the Coliseum and armory has been the best on record. The passenger car week, from the paid attendance standpoint, was at least 20 per cent greater than in 1911. Each day of that week was better than the corresponding day of the year previous with the exception of Wednesday."

"Our greatest gain through, was made last week when the power vehicles occupied the center of the stage. Our count shows that the attendance was 40 per cent greater than in 1911, each day being better than the corresponding day a year ago.

"From my talks with the exhibitors I am satisfied that this has been the greatest business-producing show we ever have had. I know one truck maker who sold \$40,000 worth of cars to one concern, while in the accessory division I had a tire man tell me he had placed an order for \$40,000 worth of tires which gives promise of totaling \$75,000 before the man is through buying. It is the same way all through the show and we closed without finding a single dissatisfied exhibitor anywhere in the buildings.

"It looks to me as if the commercial show of 1912 will tax us to our full capacity. This time we let each exhibitor state how much space he wanted and we filled two buildings, having to leave out a few late comers. Next year I think we will have to limit the exhibitors as to space. I firmly expect the commercial show to have as many exhibitors as the passenger car section, for the power wagons require more room and we can get so many in and no more.

"As for the show proposition of 1913, we have set our dates a week later in order that we can get back to our original schedule. As the calendar has been turning, each year has seen us a day nearer the first of the year, and the jump

of a week will put us back where we belong.

"The New York situation is a puzzle right now and cannot be straightened out until the Madison Square garden matter is settled. At any rate there will be an N. A. A. M. show there and the Grand Central palace will be used. It probably will be necessary for us to use two buildings, but whether the second one will be the garden or the Arena I couldn't say; that depends upon whether they tear down the garden now or wait awhile. I expect the entire matter will be cleared up early in March. As to what the Automobile Board of Trade will do in the matter of shows, I could not say at the present time."

DYER PATENT RECOGNIZED

New York, Feb. 13—Announcement was made today that Vandewater & Co., makers of the Correja car, had acknowledged the validity of the Dyer transmission patents to the extent of taking out a manufacturers' license from the owner of the patents. The series of steps that led up to this action includes several suits that have been brought against private owners to enforce individual licenses. The particular case in question was that brought against Dr. Royale H. Fowler, of Brooklyn, who owns a Correja car. When suit was entered against Dr. Fowler, he retained Darwin J. Meserole to attend to the routine matters attending such procedure and in course, Henry Kuntz, counsel for Vandewater & Co., was called upon to defend the case. After considerable negotiations, Mr. Kuntz announced this afternoon that the Correja makers had decided to take out a license from the Dyers and the fee was placed at \$3, for each car turned out.

AUSTRIA-HUNGARY TAX PROPOSED

Paris, Feb. 2—Intending tourists through Europe should note that Austria-Hungary has decided to tax visiting motor cars staying more than 60 days at the same rate as motor cars owned by natives. For a stay of less than 60 days taxes will not be enforced. The new scheme of taxation is an increase on that in force up to the present. It consists of a fixed tax per car of \$12, and in addition a horsepower tax of 80 cents for each horsepower up to 10, \$1.20 from 10 to 20 horsepower; \$1.60 from 20 to 30 horsepower; \$2 from 30 to 40 horsepower; \$2.40 from 40 to 50 horsepower, and \$2.80 for each horsepower above 50. The above is the annual taxation; visitors are called upon to pay in proportion to the time they spend in the country. The official returns show that in 1910 the number of motor cars brought into the country by visitors was 5,631, compared with only 2,138 in 1907. There are 7,721 cars owned there.

Dubois Motor a New Non-Poppet Type

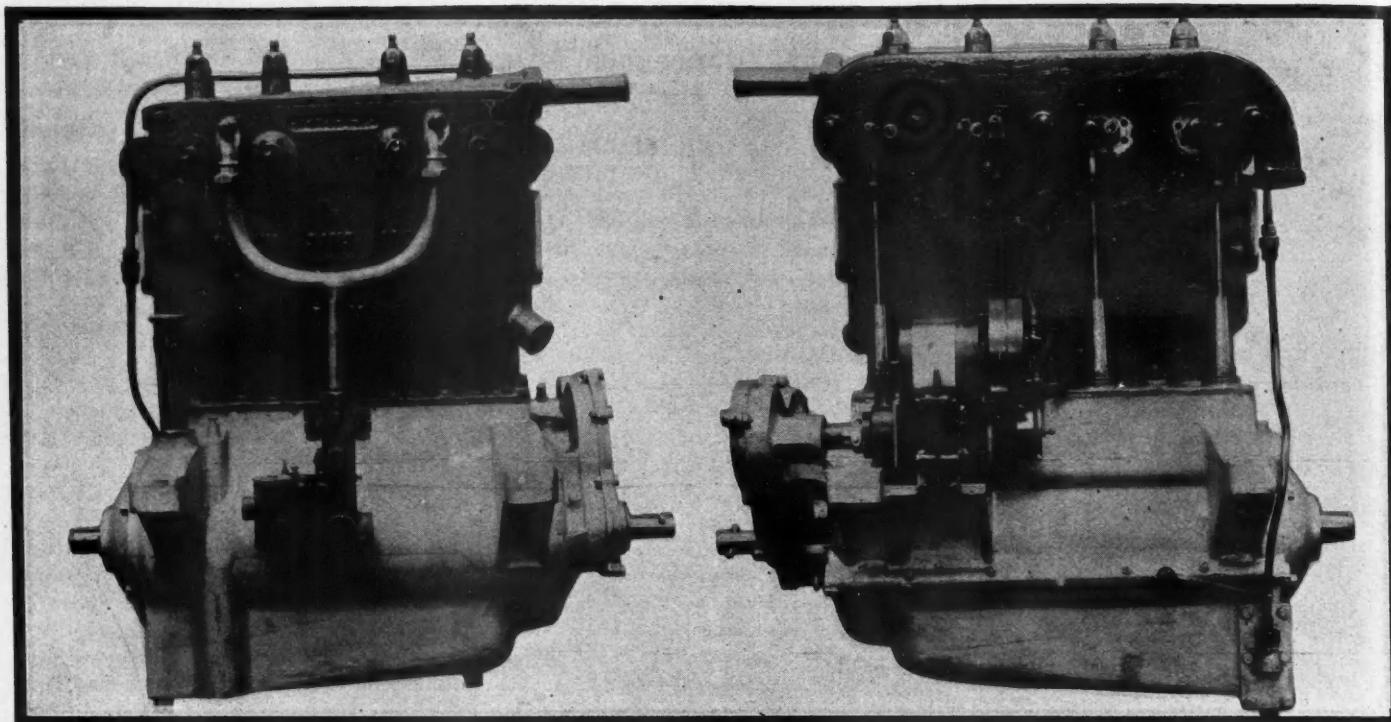


FIG. 1—INTAKE SIDE OF DUBOIS-ROUSSEAU NON-POPPET VALVE MOTOR SHOWING SPARK PLUG LOCATION. FIG. 2—EXHAUST SIDE, SHOWING PUSHRODS TO RECIPROCATING SLEEVES

PARIS, FEB. 2—Europe possesses another non-poppet valve motor. It is the reciprocating roller type, is the invention of Dubois & Rousseau, and has been adopted by the firms of Buchet and Vinot-Deguingand, two French houses specializing in light-car construction. The patentees are in negotiation for the sale of licenses in other countries.

In the head of each cylinder are two opposed elongated ports M and N for respectively intake and exhaust, Fig. 3. The ports are cut across the cylinder at right-angles to the crankshaft and are practically equal in length to the diameter of the cylinder. Thus, on a single-cylinder model of 3.9 inches bore the ports each measure 3.5 by 3.10 inches. The two ports are masked during compression and firing strokes by a hollow roller D, with a considerable portion of the lower face cut away, thus leaving it cylindrical at the two ends and dome-shaped for the central portion equal to the length of the ports. By giving this distributor a reciprocating motion it can be made to cover one port and uncover the other, thus either admitting fresh gases or allowing the exhaust gases to escape. The movement is slight, being only 42 degrees from fully open intake to full-open exhaust, and corresponds to a lift of only 13 millimeters—.51 inches—for the vertical pushrod controlling this movement.

This distributor, set in the head of and across the cylinder, is a gray iron casting having its cylindrical ends bearing in the cylinder walls and being but a loose fit.

By W. F. Bradley

The distributor D Fig 7 is sawed through at A, thus allowing it to expand, and it is this expansion, and not the initial fit of the distributor, which assures a gas-tight chamber.

Starting up from cold, and turning the motor over by hand, there is a certain amount of leak through the ports, but as soon as the motor is running under its own power the compression is sufficient

to contract the ring, holding it in close contact with the cylinder walls and giving an absolutely gas-tight chamber, it is claimed. This feature was remarkably demonstrated with one of the experimental models, a well-known French single-cylinder motor having a high compression. With poppet valves it was impossible to crank the motor with a reasonable degree of safety without a compression relief. When it was converted, the leaks were sufficient to allow it to

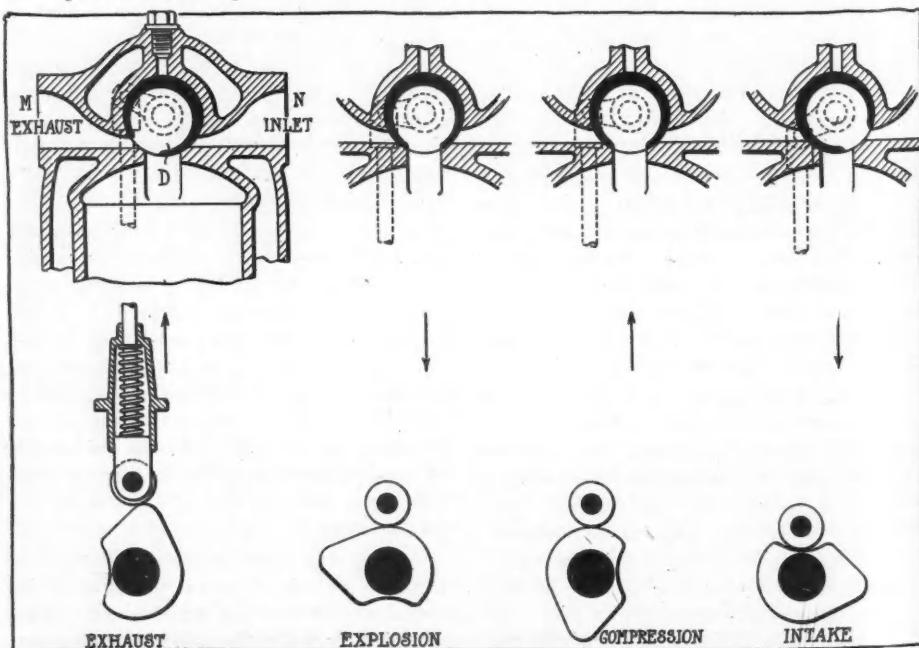


FIG. 3—DUBOIS-ROSSEAU MOTOR, SHOWING SLEEVE IN FOUR POSITIONS OF EXHAUST, EXPLOSION, COMPRESSION AND SUCTION

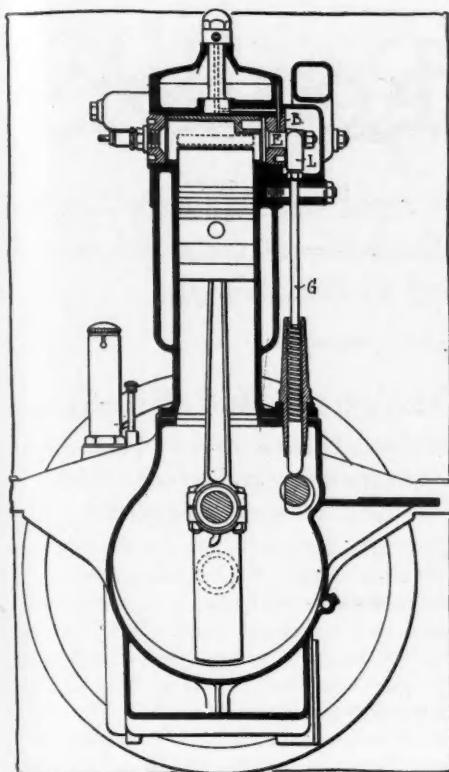


FIG. 4—END SECTION OF DUBOIS MOTOR

be cranked by hand easily, but all leaks stopped as soon as the motor was running under its own power.

Another valuable feature is that the distributor is immobile during the compression and the greater portion of the firing strokes. As will be seen from Fig. 3, it is rotated in a left-hand direction to open the intake, moved to its central position and kept immobile during compression and until nearly the end of the power stroke, then continued in its rotation until the exhaust port is uncovered.

The distributor is remarkably accessible. To take out and replace a distributor is about equivalent to changing a spark plug. As can be seen from the illustrations, the cylinder has its walls bored right through at a point very near the head, and it is through this boring

that the distributor is passed. To make the chamber gas-tight again after the distributor has been placed in the cylinder, it only is necessary to close up the borings. On the single-cylinder model this is accomplished by bolting a plate over the opening into the cylinder, naturally placing a suitable packing material between the plate and the cylinder wall. On the four-cylinder model the plate is screwed into the cylinder wall, in just screwed into the cylinder wall.

On the side opposite to that on which the plug is mounted—the exhaust side of the motor—there is a similar screwed-in plate carrying the operating mechanism. This consists of a disk B, Fig 5, on the inner face of which is mounted eccentrically a projecting stud C engaging in the hole E in the distributor. The joint is kept tight by means of a cone seating. On the projecting axis of this disk is mounted a short lever F the extremity of which receives the vertical pushrod G obtaining its lift from a camshaft mounted in the usual position in the crankchamber. The return of the pushrod entailing the reverse movement of the distributor, is obtained by means of a coil spring around the base of the rod and mounted within the housing of the pushrod guide. Not only are the springs encased, but they work under normal conditions of temperature.

Of all non-poppet valve motors this is the one which the least departs from general poppet-valve design. The crankcase is identical with the type used for a poppet-valve motor, and like it merely carries the crankshaft and a single camshaft, with, however, a special cam profile. On the model shown, ordinary timing gears are used; but the Buchet motor now under construction will make use of the silent chains for the camshaft and magneto drive. The motor possesses the desirable quality of silence; as the roller is constantly in contact with the valve profile, being maintained there by the spring assuring the reverse movement of the distributor, there is no tapping.

On the single cylinder model illustrated the method of lubrication is by means of an oil lead to a feed on the head of the cylinder, through which the lubricant is passed to the distributor and spread over its entire surface by means of its reciprocation and slight contraction and expansion. The same system is carried out in the later four-cylinder model, but on the final models oil ways are cast with the cylinders, thus allowing the lubricant to be brought up to one point on the front of the casting and driven under pressure through the leads to the distributor with a return to the troughs under each connecting rod.

The motor to be produced by the Buchet company, and which will be the first to be placed on the European market, is a four-cylinder block casting of 2.9 by 5.1 inches bore and stroke. It will only differ from the one shown by reason of the use of a silent chain for driving the camshaft, and the use of the lubrication system just described. It is declared that this motor develops 25.55 horsepower at 1,500 revolutions a minute, but has been accelerated to give 28 horsepower.

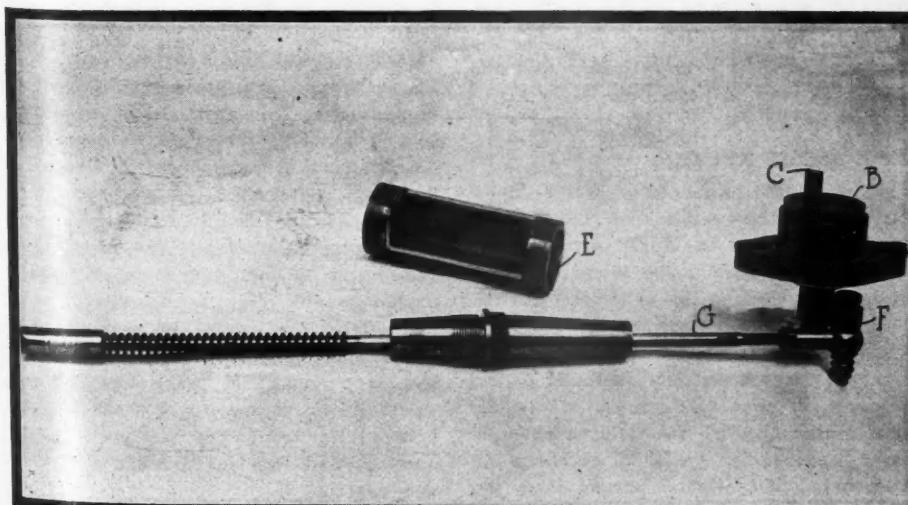
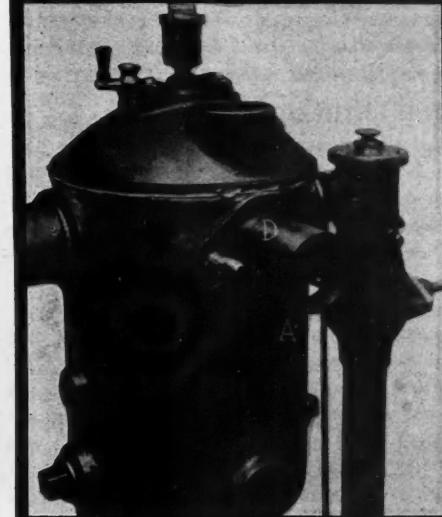
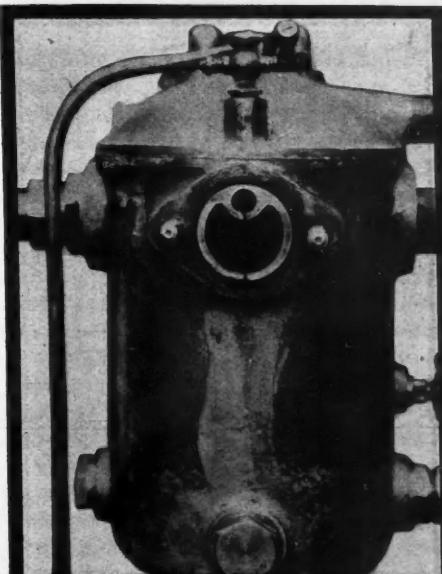


FIG. 5—VALVE-OPERATING PARTS. B, DISTRIBUTER DISK; C, PROJECTING STUD IN HOLE E OF DISTRIBUTER; F, OPERATING LEVER; G, PUSH ROD

FIG. 6—RECIPROCATING SLEEVE
FIG. 7—SLEEVE PARTLY WITHDRAWN

Forced Induction Fuel

Chicago Likes Pressure Air-Supply to Carburetor and Combination Magneto Control

CHICAGO—Editor Motor Age—I am pleased to note in a recent issue of Motor Age the suggestion of J. B. Walker for carrying out the idea which I originally advanced of introducing a charge under pressure; and I also note the comment of Motor Age that the increased complication might not pay commercially. On the same page is a communication from J. J. Jones deplored the great weight of our present machines. It seems to me that one of the causes of unnecessary weight is that we don't obtain nearly as much power out of our engines as ought to be obtained.

For some time past it has been the rule in nearly all other branches of mechanics to force things to the limit, as for example, a forced draught is used under steam boilers; steam engines are run under high pressure; and recently extremely high voltages have been used in electric motors. The idea of limiting the compression pressures by the volume of air which will enter at atmospheric pressure alone is just as illogical as depending upon nothing but the height of a smokestack for the draught through a fire, when a forced draught can be used.

On another page of the same issue is an account of a discussion before the Society of Automobile Engineers on the question of timing a spark by hand or by governor and F. E. Moscovics is quoted as saying that the proper spark position does not depend upon speed alone, and that therefore governor timing is not entirely satisfactory, but that a skillful driver can get better results by hand timing. Is not the obvious solution then a combination hand and governor control such as I suggested some time ago?

It seems to me that the present motor cars, with all that may be said in their favor, are still very far from perfection and that they can never be entirely satisfactory as long as so many of the elements involved are wrong.—S. D. Hirsch.

THE RETREADING QUESTION

Smith Center, Kas.—Editor Motor Age.—I have noted with much interest the several letters in Motor Age regarding retreading and blow-out patches and note they all have had about the same results as to service secured from such.

I have been in the general repair business for about 8 years, have sent tires to nearly every repair house within 1,000 miles of here, and with the same results from all. Not wishing to say or be understood to infer that the workmanship was poor, but after the original winding of canvas is broken down, either by wear or cuts, I have noticed that it is impossible to repair it so as to gain any amount of service. I find, however, that by taking

The Readers'

S. A. E. Motor Rating, Pressure Air-Feed, Magneto Control and Tire Retreading Discussed—Missing on Rough Roads Ascribed to Bad Wiring

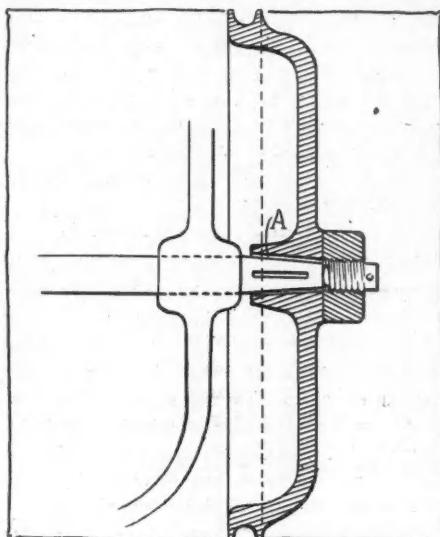


FIG. 1—WORN PULLEY BEARING

an old casing that is getting weak but is not broken, and putting in a good reliner, such as is put out by several companies, one may be well repaid for his expense and trouble; also, where a casing has a small blow-out a good, serviceable patch can be made by tearing up an old case, peeling off the outside layer of canvas and with it of course taking off the rubber tread, paring off the edges to a feather, cutting it long enough to extend considerable length beyond each side of the blow-out, then inserting the reliner. The results will be very good. I have been following this method for several years with good returns, thereby using up all my old casings and making a big saving compared with buying so many car sundries that give no better results.—Charles L. Fawcett.

HINT ABOUT IGNITION

Saint Ansgar, Ia.—Editor Motor Age.—In regard to the trouble with S. J. Vann's car, as described in Motor Age of February 8, it is evident the trouble is with the ground wire, as the symptoms are the same on both the battery and the magneto. The wire must be broken inside the insulation or it is not securely fastened to the terminal. I once found a car where the wire passed through the hole in the terminal provided for it without touching the hole, being but slightly larger than the wire. The terminal was firmly crimped around the insulation and apparently was all right.—C. B. Carroll.

Suggests H.P. Formula

Reader Offers Simple Method of Horsepower Rating With Stroke Considered

BELLE VERNON, Pa.—Editor Motor Age—I have been much interested in the discussion in the Clearing House Department regarding the S. A. E. formula for determining horsepower and recognize the fact that some of the writers are certainly not far wrong when they state that the above formula does not do justice to any of the long-stroke motors now in use. Neither does it do justice to those motors which, through their valve placing, show quite a perceptible increase in power over other motors of the same dimensions with their valves placed differently. I have had 8 years experience with the gasoline motor and have tested out several different kinds and determined on using my own formula for horsepower, according to the size motor and which formula, in my opinion, comes nearer the actual horsepower produced than any now in use.

My formula is as follows:

Bore, multiplied by stroke, by number of cylinders and divided by 3, figured at a piston speed of 1,000 feet per minute. Of course it is understood that any difference in piston speed, whether higher or lower, would also make a corresponding difference in the power produced. Example: a $4\frac{1}{2}$ by 5 motor, four-cylinder.

$4\frac{1}{2} \times 5 \times 4 = 90 \div 3 = 30$ horsepower. If we are figuring a valve-in-the-head motor, add 15 per cent which equals $34\frac{1}{2}$ horsepower. For a two-cycle motor add 25 per cent, which would give $37\frac{1}{2}$ horsepower. The above formula can be applied to any motor. I think you will find it as near correct as can be got by means of figures.

I note the trouble of J. S. Vann, in issue of February 8, of Motor Age, and wish to state that I hunted for relief from a similar trouble for two weeks. The car ran well on level roads, but on rough roads would miss and stop. The motor would also stop sometimes when the car was standing idle if one would shake the car. I found the trouble to be caused by the binding post on one of the dry cells touching the side of the metal battery box when the car was shaken or on rough roads. Lining the box was a good cure. Perhaps this might help.—L. L. R.

Clearing House

Poor Vibrator Adjustment Blamed for Many Ignition Troubles
and Use of Master Instrument Recommended—Carbureter Not Believed to Keep up With Motor

Lighting for Magneto

Illinois Subscriber Finds Ford Magneto Gives Sufficient Current for Lights and Ignition

RANDOLPH, Ill.—Editor Motor Age—In the January 18, 1912, number of Motor Age, C. E. Christ, through the Readers' Clearing House, says the Ford motor will miss and die when electric lights are used in connection with the magneto. Motor Age gives the trouble as due to the fact that too much current is being used with the lights and not enough left to provide suitable ignition.

It is true that this magneto was designed for ignition purposes only, but the fact is, it will give plenty of current for ignition and electric lights even at its slowest speed. I have in mind several Ford cars with electric lights which show no missing of the motor or decrease in engine speed with the lights on. The trouble, in my opinion, is due to the fact that too much current is being used for ignition and not enough left to provide for lights.

The vibrators in many Ford cars are adjusted by the owners to consume a great deal more current than is necessary. The points in the spark-plugs may be too far apart, causing that cylinder to miss at low engine speed. I have known of Ford magnetos being partially run down through use of batteries whose connecting wires accidentally came in contact with magneto terminal, on dash or transmission cover. The use of electric lights in such cases would not be satisfactory.

The use of a master vibrator, if properly adjusted, will decrease the amount of current used for ignition as the current used is the same for each cylinder. With separate vibrators, the spring tension is not always the same; some vibrators requiring higher engine speed for operation, therefore lights used under these conditions would cause the engine to miss fire at low speeds but through no fault of the magneto to furnish enough current for ignition and lighting. This has been my experience.—G. Kelly.

WELDING CRANKCASE

White Hall, Ill.—Editor Motor Age—I wish you would kindly answer the following questions through the Reader's Clearing House:

1—On the crankcase the small flanges are broken. Can Motor Age suggest a way to repair these. At A, Fig. 2, is an illustration of broken flanges. At B and C is the way I have repaired one or two, but this does not look well.

2—On the end of the camshaft there is a pulley which drives the oiler, this has become badly worn by having been allowed to work loose and to run without attention. On account of the shaft tapering, I cannot work out how to repair it. Can Motor Age advise me on this?

At A, Fig. 1, is the space that I want to take up. Is it possible to bush a bearing that is tapering like this? Notice pulley is keyed to cam shaft.—Trouble.

1—The repair of the broken lugs on the aluminum crankcase is a welding job. The method usually used is the oxy-acetylene welding process by which a metal is heated until it flows and makes a solid joint. Often an extra thickness of metal is left over the break where the conditions permit it. The use of the strap suggested, while it may add strength, will not be sufficient alone and it is doubtful if the extra hole required will not weaken the case more than the strap will strengthen it. The usual method of welding in a broken crankcase lug is illustrated at D, in Fig. 2. With such a repair it is better to put an extra thickness of metal on the crankcase for several inches beyond the break to prevent side cracks.

2—To repair the oiler pulley bearing on the end of the camshaft will necessitate the pulley being reamed out and the bearing rebushed. This will require taper reaming and a taper bushing.

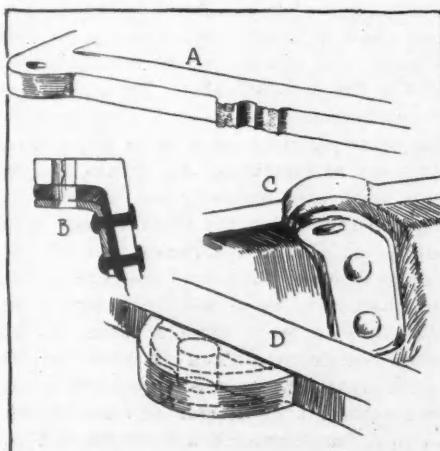


FIG. 2—BROKEN CRANKCASE AND TWO METHODS OF REPAIRING IT

Carburetion Faulty Iowan Believes Motor Difficulties Could Be Eliminated by Location of Vaporizer

L E MARS, Ia.—Editor Motor Age—When we look over the hundreds of carburetors and mixing devices that have been gotten out to make more perfect carburetion, we can safely say that in no other branch of the motor car or gas-engine industry has there been so many hundred, yes, thousands, of dollars spent. Some of these new parts have some merit, while many of them have added complication and expense with questionable results, yet most all of them have found a ready sale among buyers who were not in a position to judge their merits, but thought they were, and were unwilling to ask, or pay those who did know. Many a good old carburetor has been junked to be replaced with some new-fangled one and some wheel-spraying device, sold under various names.

It must be admitted that as the improvement of gasoline motors has gone on, we are expected to use a lower test of gasoline, besides doing more driving in cold weather and the more or less unsatisfactory results has created a demand for these improvements.

That a low-test gasoline will give more mileage to the dollar invested has been proven by many reliable tests; in fact, in warm weather, there is a big question in the writer's mind if low-test gasoline, bordering on naphtha, will not, gallon for gallon, give more power and speed than the higher-tested gasoline. Besides this, one must consider the lack of loss by evaporation, both in the storage tank and in the car, whose tank is constantly agitated, besides the less danger in using the lower-grade gas.

It is surprising how the lowering of the temperature, say from an average of from 60 to 70 degrees, down to about the freezing point will make a decided difference in the operation of a motor, which becomes the more pronounced by the use of a low-test gas. Many a beginner and even some near-experts have called for help. They located the trouble as defective ignition, and a dozen other causes, among them carbon, valve-timing, etc., and proceeded to change things that were entirely right to dead wrong, thus aggravating their trouble. By this time, they certainly are in need of some one who understands the case.

Practical tests that cover an entire season, in racing and all kinds of road work, hill-climbing, etc., which took in various altitudes and that awful bugaboo, climatic changes, proved conclusively that there were at least two carburetors made 6 years ago that could give the maximum power of the motor, under all these conditions, with positively no change of adjustment, after once set properly. This of course means that the most economic

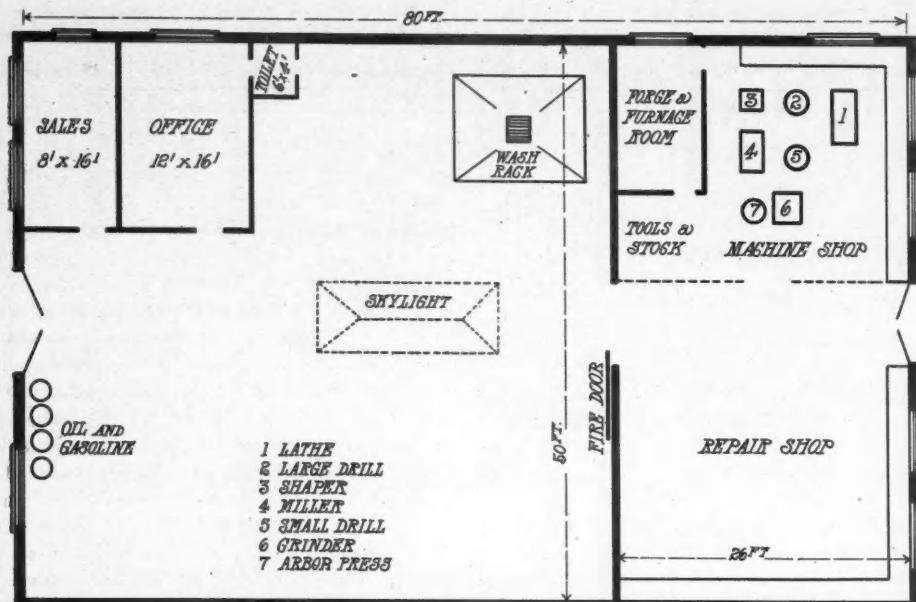


FIG. 3—FLOOR PLAN FOR 50 BY 80-FOOT GARAGE WITH LOCATION OF EQUIPMENT

results were also obtained. One of these carburetors did not have an automatic air-inlet valve and the other one did. This being true, it shows so far as perfection in carburetors is concerned, little, if any improvement has been made since.

The desire of makers to make their motor excel another make with the same piston displacement, has induced the use of extra large valves, and intake manifolds, so as not to wire-draw or prevent a full charge being drawn in at full speed. This has made the intake area so great for common speeds that, no matter how well vaporized the fuel had been in the carburetor, its slow speed through the manifold had allowed it to condense back. This is made worse by the use of a powerful fan, even in water-cooled motors, whose combustion chambers are already below 200 degrees whereas they should be at about 350 degrees.

Will not a high-located carburetor with a pressure system, with a medium sized manifold direct, which should take more charge than a long large one, and the dispensing with a fan, even in air cooled cars, and, at least the front half of the manifold well covered even from the natural draft, give us the results for which we are looking?—C. L. von Berg.

BRITISH CARBURETERS

Vancouver, B. C.—Editor Motor Age—
1—In the opinion of Motor Age, what magneto produces the fiercest and most powerful ignition spark? Every maker claims this for their product but I would like the expert opinion of Motor Age. I have heard that the largest K-W is one of the best.

2—Do you know anything of a British carburetor called "Polyrhoe"? If so, how does it compare with the Stromberg for performance.—W. B.

1—There is no reason for stating that any one make of magneto will produce a more powerful ignition spark than an-

other because this depends upon the conditions under which it is run and the exact degree of magnetism of the magnetos and other points. All the standard magnetos other, for this depends upon the condi-give satisfactory results. It is not the policy of Motor Age to recommend one make above another.

2—The British carburetor referred to is in constant use upon many of the British cars and is giving satisfaction. It is designed for British conditions in the same way that the Stromberg is designed for American conditions, and so far as Motor Age knows, is giving as much satisfaction.

TOO MUCH OIL

St. Cloud, Minn.—Editor Motor Age—We have a car equipped with a 4 by 4½ Oswald motor where the front cylinder always carbonizes the exhaust valve. The valve works freely and the valve spring is all right. We had the piston out once and put on new rings and put in a new valve, but the same trouble exists. After running 50 miles the exhaust valve is carbonized.—Peter Entringer.

It seems very probable from the description of your trouble that too much oil is being supplied to the front cylinder. Unless there is considerable missing in this cylinder the trouble cannot reasonably be laid to the exhaust valve. Try the engine for compression to see if it is as great in the front cylinder as it is in the others. This can be ascertained by turning the engine over and watching the valves. It may be found that the front springs have settled so that the forward part of the engine is lower than it is designed to be, in which case there will be a higher oil level in the front cylinder than in the others, so that too much oil would be fed to the front cylinder and not enough to the rear cylinders. This can be remedied by putting shims under the forward part of the motor suspension. A better grade of cylinder oil will remedy your difficulty.

Idea for Public Garage

Diagram Given for Building 50 By 80 for Storing Cars

PARKSTON, S. D.—Editor Motor Age—

We are building a new garage 50 by 80 feet, and would like some information concerning the construction of same, such as floor plan and shop dimensions, location of benches, machinery and the necessary equipment for a well-equipped garage. Will Motor Age publish a floor plan, showing such arrangement?—Reader.

Fig. 3 illustrates the floor plan of a one-story garage of the dimensions you suggest, showing shop dimensions, location of equipment, benches, etc. It will be noted that a very complete machinery equipment is suggested, but the list of equipment can be altered to suit the appropriation for this purpose. A central shaft near the ceiling midway of the two rows of machines will care for everything but forge and lathe, which are supplied with power by a cross shaft near the left wall. Arrangement of the windows will depend, of course, upon neighboring buildings, but the more window space provided the better in such a building, particularly in the repair shop. It will be noted that fuel and oil tanks are located near the front door. This is suggested to care for transient trade and also to give the man in the office an easier check on his supplies. There should be a door which is not shown in this illustration connecting the office and salesroom, and also a door direct from the street to the salesroom. An air compressor with storage tank may be installed with the air piped to various points around the garage.

PLAN FOR GARAGE

Salina, Kas.—Editor Motor Age—Has Motor Age any plans for a garage 40 by 120 feet?—G. S. Hawkins.

In Fig. 4 is illustrated the floor plan of a garage 40 by 120 feet and with the suggested location of office, repair shop, etc. For location of equipment see answer to Reader, Parkston, S. D., in this issue.

ACETYLENE AFFECTS COPPER

Jasper, Mich.—Editor Motor Age—Through the Reader's Clearing House please answer the following:

Is there any difference between brass and copper tubing for piping acetylene gas for motor car headlights?

I have been informed that acetylene gas acted upon copper in such a manner as to make it unsuitable for this purpose. If such is the case I would be pleased to have you explain the difference and which kind of tubing is best.—A Reader.

Acetylene has no effect upon metals in a free state except copper and silver. A composition called copper acetylene can be formed by passing pure acetylene over pure copper, which composition is in the nature of an explosive fulminate. For this reason, no pure copper tubing should be used. Brass tubing is better.

Mysterious Trouble Owner of a Pope-Toledo Puzzled over Actions of Motor

CHICAGO—Editor Motor Age—Through the Readers' Clearing House I wish Motor Age would answer the following:

I have a 1907 50-horsepower Pope-Toledo, type 15, fitted with overhead valves and operated with a single cam-shaft and rocker arm. The Eisemann dual ignition system is employed. While recently testing the engine I sheared off two of the four bolts that held the connecting-rod bearing of the second cylinder on the crankshaft. After replacing these, I adjusted the other bearings and worked them in until the crankshaft turned over with ease. When I started the engine it missed on the second cylinder. I tested the ignition, changed the spark plugs and put in a new high-tension cable from the magneto to the cylinder. I then adjusted the rocker arm, ground in both valves, put new copper gaskets around them and put in a new roller at the bottom of the pushrod where it works on the cam-shaft, and also tested the compression which was about the same as on the other cylinders. Still it didn't run. I then put in new gaskets in the intake manifold and readjusted the carburetor, which is a Stromberg water-jacketed. The exhaust pipe gets hot if the engine is run for 10 minutes or longer, and it also hits on four if raced. When pulling it I went over 30 miles per hour. It seemed to work all right, but under that it missed and knocked. I want to say, however, that only a few days ago it ran perfectly all the time and throttled down to about 18 miles per hour, but when we arrived at the barn the exhaust pipe was red hot and the radiator was steaming and boiling. The next day it missed on the second cylinder again. What is the trouble, and the remedy?—W. R. S.

Your inquiry shows that you have gone about the elimination of your trouble in a very logical manner, but you say that upon testing the compression of the second cylinder it was about the same as the

others. Now whereas your trouble seems most apt to be due to poor adjustment or a slight derangement of some part of the carburetor, it may all be due to a little less compression in the offending second cylinder. For instance, inasmuch as the motor has been overheating, it is reasonable to believe that either the mixture is too rich or too lean. If too rich, the exhaust would have a very strong pungent odor even while the motor was firing regularly without misfiring; while with too lean a mixture there will be no strong pungent odor unless the motor is misfiring, and there is apt to be more or less backfiring in the carburetor, when the motor is speeded up. The misfiring might have led you to believe that the carburetor was at fault, and you may have enriched the mixture to eliminate the trouble. By enriching the mixture, you probably are able to get more power until the motor gets warmed up and is running at high speed, at which time the lack of compression in the second cylinder is not so apt to be great enough to cause misfiring.

Perhaps one of the valve cages is warped, so that one portion of a gasket is being burnt away. Examine the gaskets again, both inlet and exhaust; also see that valve stems are not too loose a fit in their guides, in which case, air might be admitted in sufficient quantities to spoil the mixture.

To test the ignition system again, remove the high-tension cables from the spark plugs one at a time, and see that the spark will jump as far from the end of the cable to the plug in the second cylinder as it will from the other respective cables. If it does not, either there is too much space between the points of the plug, or there may be a short-circuit in the distributor of the magneto, the distributor plate may be cracked in the neighborhood of the contact piece of the second cylinder terminal.

It is possible that there is something wrong with your oiling system which causes the overheating. It also is possible that there is a small leak in one of the cylinders which allows a little water to

escape into it from the waterjacket. In this case, the water would be most apt to collect at the points of the spark plug and short-circuit them. Remove the plug and examine it after the motor has been running a while and misfiring regularly, and see if there is a little drop of water near the sparking points.

PROBABLE CAUSE OF TROUBLE

CLINTON, Ind.—Editor Motor Age—I feel that I should answer our friend S. J. Vann, from Jackson, Ala. I presume he has a four-passenger car, with the battery carried on the running board. If he will carefully examine the wire running from the battery to the coil box on the dash and see that the insulator is not broken and is not in contact with some metal or pinched under the gas tank, he very likely will find his trouble is in the battery tilting at one side of the metal box and grounding to the frame of his car. Any contact on the wire will stop the motor.—J. L. Horney.

ASKS ABOUT SIGHT-SEEING BUSES

ANCON, C. Z.—Through the Readers' Clearing House will Motor Age answer the following questions:

1—What company or companies are making sight-seeing cars carrying twelve to twenty passengers?

2—What are the prices of these cars?

3—Can the expense of these cars be estimated about the same as trucks? If not, would like some data on expense.

At the recent New York commercial show not a sight-seeing wagon was exhibited. On asking the different exhibitors if they were producing such, it was discovered that all of them, or nearly all of them, will manufacture sight-seeing bodies on order, but they do not carry them regularly in stock. You had better communicate with the leading truck makers and submit the specifications you require and then secure from them their prices.

CAR JERKS ON MAGNETO

FAYETTEVILLE, Ark.—Editor Motor Age—Will you kindly answer the following through the Readers' Clearing House?

I have a car equipped with a Splitdorf magneto. When the car is running very

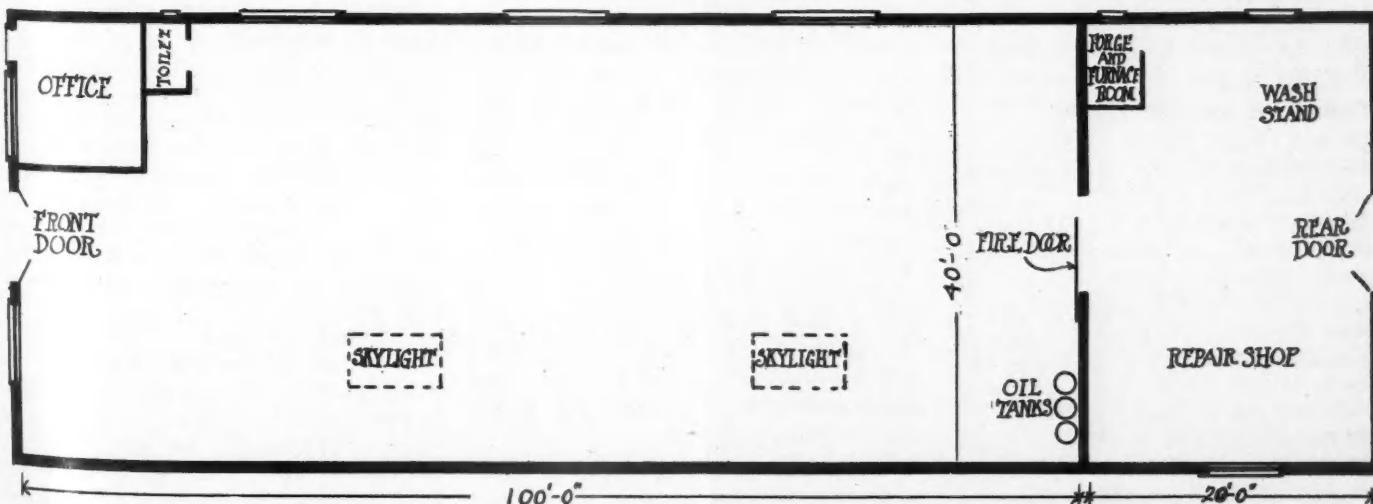


FIG. 4—PLAN FOR 120 BY 40-FOOT PUBLIC GARAGE WITH LOCATION OF OFFICE AND REPAIRSHOP

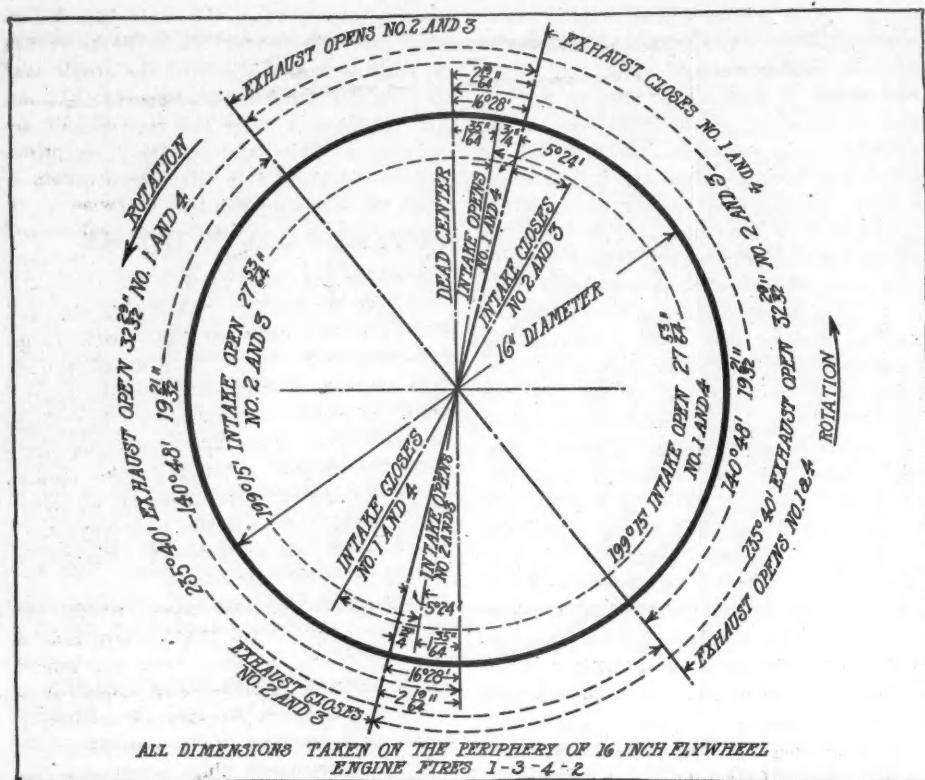


FIG. 5—DIAGRAM SHOWING VALVE SETTING OF RIDER-LEWIS MOTOR

slowly on high it jerks violently. I have examined all four cylinders and find them firing well. No adjustment of the carburetor seems to make any material difference, but by shifting the switch to battery the jerking instantly stops and the car pulls all right. Is the trouble in the magneto? If so, where and how can I remedy it? Any information regarding this will be appreciated—E. Ellis.

See that the compression is good and equal in all cylinders; also see that the cylinders and piston heads are clear of carbon deposits. Then try the car again. If jerking still exists, see that the platinum points of the circuit-breaker are clean and smooth, and that they separate 1-32 inch or about the thickness of a smooth dime. If pitted or burnt, smooth up with fine, thin jeweler's or finger-nail file. If this does not improve action of the motor, send the magneto to Splitdorf agency, Chicago, with a letter stating the nature of the trouble and it will be promptly fixed up and returned.

RIDER-LEWIS MOTOR TIMING

Glasgow, Mont.—Editor Motor Age—I have a Rider-Lewis 1910 model, purchased second hand, that I am unable to adjust properly. The engine is equipped with a Remy magneto and Schebler carburetor, both of which are in good shape and correctly adjusted. Yet the engine will not run slower than about 500 revolutions per minute and when throttled down slower than that it backfires a few times and stops. In starting the engine it is necessary to close the air intake entirely and the engine runs better on retarded throttle when the air intake is about half closed. The valves have been ground and are in good shape.

The magneto is adjusted and delivers the spark at the proper time; the intake manifold connections have been examined and no leak found. Will Motor Age advise me, if possible, what the trouble is? I am inclined to think the valve timing is incorrect and would be pleased to have Motor Age instruct me as to the method of timing same. I would like the address of the manufacturers of this car.—A Subscriber.

It seems probable from your statements that the carburetor is not correctly adjusted for low-speed running and it is suggested that you have the carburetor readjusted. Methods of adjusting this carburetor have been described and illustrated in Motor Age in the Readers' Clearing House, November 30, 1911. The main difficulty, however, seems to be, as you suggest, in the timing of the motor. Practically all these motors had the flywheels marked to assist in timing the valves in which the valves are set according to the marking they should be correctly timed. In Fig. 5 is shown the complete setting of the valves on all four cylinders of the motor, all dimensions being taken on the periphery of the 16-inch flywheel. It will be found that these dimensions correspond with the markings on the flywheel. The engine fires in the following order: 1-3-4-2. Rider-Lewis parts can be had by addressing the Nyberg Automobile Works, Anderson, Ind. The original design of Rider-Lewis motor was abandoned in 1910 and Rutenber motors were installed in later cars.

The illustration shows the setting of the original motor installed in the 1910 Rider-Lewis cars.

Two Chassis the Same Liberty-Brush and Standard Brush Built Along Same Lines

FANKLIN, Ill.—Editor Motor Age—Through the columns of the Readers' Clearing House will Motor Age answer the following questions:

1—Is the cooling system in the Liberty-Brush car the same as that on the Standard Brush runabout, and does Motor Age consider the Liberty-Brush capable of taking two passengers safely over the hills of central Illinois when the roads were muddy?

2—Does Motor Age know whether the 1912 model Brush has adopted the idea of encasing the driving chains, as several other makes have done, and is the chain-encasing idea a success?

3—I notice some of the new 1912 cars are advertising 60-inch tread. Will this be adopted universally as the standard, or does Motor Age advise varying a 56-inch tread for central Illinois where the buggies are all wide track, 62 inches?

4—in Motor Age of November 2 mention was made that a spring wheel was being tested. Give illustrations and description of same and will spring wheels be adopted for general use in the near future?—Burley F. Wright.

1—Yes; the entire chassis design of the two cars is identical. With car in good condition there need be no fear of trouble unless the roads are worse than most Illinois roads.

2—The chains on the Brush are not inclosed. Where the method of inclosing the chains has been employed, it has proved satisfactory.

3—Most manufacturers offer an option as to the width of tread. In general, the most satisfactory tread is that which conforms with that of horse-drawn vehicles in a particular locality.

4—There is a vast number of designs of spring wheels being developed. But there is no indication that they will be generally adopted for some years, at least.

CRITICIZES PUBLICITY METHODS

Philadelphia, Pa.—Editor Motor Age—I am not a designer nor yet a builder of cars—merely an outsider with a hobby—so that my remarks are not tainted by sour grapes. I would like to say that such publicity as is now being indulged in by some advertising men who have been given carte blanche to use the names of designers will dig graves for these designers in the estimation of engineers and sensible-minded citizens. Their ideas eventually will come to be scoffed at as hot air even if they contain much wisdom. If a designer be great enough his products will become known as a Herreshoff yacht is known. Such designers as the ones I have in mind should cease before they go too far and throw away the success they have spent so many years attaining.—Diogenes.

Wm. Wright

Source of Vanadium Rare Element in Steel Alloys Found in Quantities in Peru

ELMIRA, N. Y.—Editor Motor Age—Knowing Motor Age always is disposed to investigate anything in connection with the motor car trade if not already acquainted with the matter in question, I wish to ask that it give, through the Readers' Clearing House columns, a clear and concise answer to each of the following questions:

1—What is the source and where is vanadium found?

2—Can you give the name of any analytical chemist who has succeeded in analyzing steel and in so doing has found any vanadium?

3—Where can a portion of vanadium, amounting to say about 3 grains (pure vanadium), be obtained?

So much has been said in favor of vanadium steel that I wish to have a few facts regarding this substance. Up to the present, although experts and chemists over the country have been asked by our company to answer these questions, we have yet to find one who states that he can purchase a sample of pure vanadium. I have been told by one who is supposed to be an authority that an ash from coal in certain mines in Peru contains a trace, so that many tons of ash might produce $\frac{1}{4}$ grain of vanadium, and yet the same party states that he does not know where a particle of it can be found in the pure condition.

I think other readers of Motor Age would be as pleased as would our company if we could get an answer to these questions.—C. B. Hatfield.

1—The element vanadium, while very widely distributed, only has in the last few years been available in sufficient quantities for metallurgical purposes. It is apparently diffused through all primitive granites, and many sedimentary rocks and clays. Its presence has been discovered in many iron ores, and practically all American magnetites and secondary iron ore deposits contain small amounts. It occurs in larger amounts in many lead ores as the mineral vanadinite, a chlorovanadate of lead, and until recently this mineral was the principal source of vanadium salts. Vanadium is also found associated with copper, zinc and uranium ores. In 1905 a very large deposit of a new vanadium mineral was discovered in the Andes of Peru. This mineral is a sulphide of vanadium containing about 20 per cent vanadium and free from the usually associated metals, lead, zinc and copper. This deposit is the source of the greater part of the vanadium used in producing vanadium alloys today.

2—Owing to its great affinity for oxygen, hydrogen and carbon at high temperatures and its power of absorbing hydrogen, vanadium has not yet been separated commercially in the pure state. However,

steels containing various percentages of vanadium are being analyzed right along in most of the metallurgical laboratories; for instance, Motor Age is informed that in the metallurgical laboratory at the Armour Institute of Technology at Chicago such analyses are made from time to time.

3—Vanadium cannot be obtained commercially in a pure state, as explained above. For the purpose of alloying steels it is nearly always bought as an iron alloy in the proportions of 30 per cent of vanadium and 70 per cent of iron. George L. Norris, engineer of tests of the Vanadium Sales Co. of America, presented a paper on the subject of vanadium and vanadium alloys before the Franklin institute and a reprint of this paper may be obtained either from the Journal of the Franklin institute or from the Vanadium Sales Co. itself. Motor Age refers you to this for further details as to the physical properties as to vanadium alloys.

NEW CARBURETER THE REMEDY

MENA, ARK.—Editor Motor Age—in the Readers' Clearing House columns of February 8 issue of Motor Age, "Reader has trouble with his 1911 model T Ford." For his information wish to say that I had trouble exactly similar to his, in fact I could not have better described my own trouble. I attributed the trouble to a faulty mixture which could have been caused by faulty intake pipe, water leakage through cylinder head gasket, intake pipe gasket not fitting, poor seating of valves, or valve stem adjustment worn. After thoroughly satisfying myself that none of these caused the trouble I then went after the carbureter and could see nothing wrong with it, but nevertheless borrowed a new one to try, and there is no more miss, high or low, down hill or up, light or heavy load, in fact the car runs better than it ever did before. Before changing the carbureter the oil would flood things in the front cylinders. The whole secret was the carbureter was not furnishing the proper mixture, but I have not yet learned just why.—I. M. Davis.

DRAW-BAR GUARANTEE NEEDED

SANDY POINT, TEXAS.—Editor Motor Age—After reading the Clearing House columns and noting the Mayville, N. D., man's queries, Motor Age issue December 7, page 36, on the tractor subject, I think it is in error about its answer.

1—A 6 by 7 motor four-cylinder will develop enough power to pull the six plows, provided the cut is not over 6 feet wide and 6 to 9 inches deep. But to have the weight of the tractor only 6,000 pounds would not hold it to the ground; besides, plowing is about as straining on iron as a 500-mile race, and there would have to be at least 10,000 pounds weight to absorb the shocks and vibrations, as well as furnish the strength.

The subscriber also will find that tractors are very hard to keep together, es-

specially the light ones, and the different makes have different weights, widths and sizes. No two makes rate their machines alike and as yet no standard of type exists. He also will find all of them gold-medal winners, hence the price. If buying, he should see that he gets a draw-bar pull guarantee, otherwise it is a guess as to the construction will vary the amount of power absorbed in propelling the machine itself.

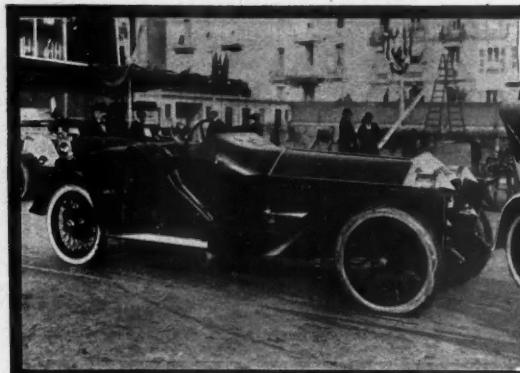
2—Will Motor Age qualify on the answer that a double set of spark plugs is impractical? By the rule of thumb it would seem that two weak sparks would explode a mixture quicker than one and that two plugs would not foul as easily as one. Wouldn't the double set with automatic advance be an ideal arrangement for certainty in always having a spark to explode the charge in every cylinder?—Farmer.

1—Records of tests upon which the tractor answers were based show that a 6,000-pound tractor plow with six mould boards, plowed stubble to a depth of 8 inches. Would not recommend so light a tractor for everyday work, however.

2—With two spark plugs wired in series from the same magneto it would be necessary to generate double the voltage ordinarily employed. It will also be necessary to insulate one of the plugs from the cylinder—a rather difficult proposition. If the two plugs are to be wired in parallel, it will be necessary to double the current capacity of the magneto; and the result will not be entirely satisfactory, because the resistance of the spark gaps will not remain the same in the two plugs, although with this arrangement you are doubly protected against missing. If the motor and ignition are kept in the condition they should be, the difference in operation would not be worth the cost of the change.

SPEEDING UP THE ENGINE

PRINCETON, ILL.—Editor Motor Age—We read with much interest the reply of Motor Age in issue of January 4 to our inquiry as to what causes increase of power when a gasoline motor is speeded up. It is wonderful what speeding up will accomplish when there is a very hard pull. For instance, a heavy touring car at the bottom of a hill was obliged to slow up on meeting a team and by the time the road was clear the ascent already was begun at comparatively slow speed. The throttle was opened gradually, and retarded when it became necessary, but the load was too great for the power and as there was danger of the motor being stalled, the clutch was thrown out and the car backed down the hill. Then the motor was started, speeded up, and under the same conditions as before, with the throttle about the same, the ascent was easily made. Some think the momentum caused by speeding up would not have carried the car up the hill, which was quite a long one.—F. W. Winbolt.



From the Four Winds

The so-called rally to Monaco, which was reported in detail in last week's issue of Motor Age was a remarkable one because of the intense interest aroused in Europe. It attracted a big field of cars and critics at the big resort had a chance to study the latest ideas in body styles, a few of which are shown herewith. The first illustrated is a 26-horsepower Venant with torpedo-shaped headlights and the gasoline tank located in the cowl of the dash. Next is a 40-horsepower Metallurgique which carries two wire wheels and which also has the gasoline in a dash tank. Third is another Venant with odd-shaped fenders and hoods for the headlights. Fourth is an English Humber, fully equipped for rough touring and with four extra casings on the running board. Fifth and last is a Rolls-Royce limousine, one of the prize-winners. Touring in limousines is becoming popular in Europe and threatens to become so here, one American maker having promised to enter fifteen limousines in the transcontinental tour of the A. A. A. in 1915 to the Panama exposition at San Francisco.

ONE More Convert—Fitchburg, Mass., is now one of the many in New England that has capitulated to the motor fire apparatus, a chemical and hose wagon having been delivered to the city.

Dingley Coming East—It is stated from the Pacific coast that W. H. Carlson, of Los Angeles will enter his Simplex in the 500-mile race at Indianapolis and that Bert Dingley will drive it. The same entry will be made in the Santa Monica road race.

After Universal Lights—A bill has been introduced in the Rhode Island legislature, following a recommendation of the state board of public roads, designed to have a law passed similar to the one now in force in Massachusetts requiring all vehicles using the roads at night to carry lights. It will require two lights instead of one, as in the Bay State law, unless the legislature amends it.

Organizing Massachusetts Clubs—James Fortesque, secretary and treasurer of the Massachusetts State A. A., is planning to form twenty motor clubs in the Bay State during the coming year, in order to bring about better laws and promote the propaganda of improved roads. Already he has formed the plans for the organization of clubs in Lynn, New Bedford, Rockland and Brockton. These clubs will be organized within a few weeks.

Railroads Helping Louisiana—By way of demonstration as to the permanence and cost of good roads, the Illinois Central is having several sample sections of road built at different points in Tangipahoa parish, Louisiana. The company asserts that the general adoption of the method used will enable the parish authorities to add materially to the amount of improved roads without increasing the fund set aside for that purpose. The railroad company agrees to furnish an engineer to direct the work without cost to the parish. Taking advantage of this offer,

the authorities in Tangipahoa will construct a highway connecting Hammond and Amite City at once. It is understood that other railway lines in the state are preparing to make the same offer.

Modern Progress—Charles F. Van Sicklen moved the entire contents of his eight-room house from Chicago to St. Charles, Ill., a distance of 45 miles, in a 3-ton Packard truck in the short time of 3½ hours.

Canadians Against Toll Roads—At a meeting of the Canadian legislative assembly the minister of the public works submitted a bill which was read for the first time, by which the government proposes to spend \$500,000 in 5 years for the abolition of toll bridges and turnpike roads in the province. While the government is asking the approval of the house for the spending of the amount mentioned, it is also to be specified in the bill that the municipalities are to contribute their share.

Bill Aimed at Drunken Drivers—The Virginia state legislature has been in session 2½ weeks and only one bill affecting motorists has been introduced so far. The measure was presented in the house by Delegate Paul Bargamin, of Bedford county, which provides if anyone is convicted of running a motor car while under the influence of liquor he never shall again be allowed to operate a car within the state of Virginia. The bill is fashioned somewhat after the traffic ordinance of Richmond which prohibits the operation of a car by a drunken chauffeur, but the ordinance does not prevent a repetition of

the offense. The Bargamin measure would close the highways of the state forever to drunken drivers of cars.

Denver Club in New Rooms—The Denver Motor Club opened its new quarters on the top floor of the Majestic building with a reception to its members and friends last Saturday evening. In its new location the club has nine rooms, well furnished and equipped with conveniences for the members. By the time the summer opens the club probably will have its own home in the country near Denver, in addition to its city quarters.

May Promote Truck Run—A reliability tour for motor trucks and light commercial cars is planned by the newly organized Wisconsin Commercial Car Association, composed of manufacturers, dealers and salesmen interested in the commercial vehicle. More than twenty-five distinct makes of commercial vehicles are produced in Milwaukee and Wisconsin, making a formidable array in a contest, but it is not believed that the proposed tour will be limited to Wisconsin-made cars. Frank G. Brandecker is president of the association and Carl G. Anderson secretary and treasurer.

After a Transcontinental Trail—A movement is being made to boost the Nebraska-Wyoming-Utah-Nevada road from Omaha west as the best route that could be followed for a transcontinental highway. The Laramie Commercial Club, of Laramie, Wyo., is sending out communications to towns on this route, urging the formation of an association to improve this route throughout. The movement is meeting with good success. It is claimed that at present this is the best way, and is the only one that has a good branch to Yellowstone park. Meetings are being held in Kansas and South Dakota to boost a more southern and a more northern route. It is probable that a convention





will be held in the near future to form a Nebraska-Wyoming-Utah-Nevada road association.

Look Out for Fire Trucks—Councilman B. Thomas Potter, of the Providence, R. I., city government, in a report recommending an amendment to the statutes relative to the right of way of fire, police and ambulances, advocates the adoption of a regulation that requires drivers of other vehicles to skirt the right-hand curb as closely as possible when such motor vehicles are approaching. The ordinance will be adopted shortly.

Reviving Iowa Association—The Iowa State Automobile Association is to be revived. W. E. Moyer, president of the association, has engaged Leslie Smith, who has just finished the work of reorganizing the Nebraska state association, to aid him in the work. Mr. Smith will visit all their larger cities of the state and either revive the old clubs or perfect new organizations. At the present only four cities are members of the state association.

Portland Club's Progress—Plans for the new home of the Portland Automobile Club, of Portland, Ore., have been accepted and construction work started during the past week. Eight rooms will comprise the house, which will be built on the club's property on the west side of the Sandy road, about 18 miles from the center of Portland. The cost will be \$7,500. Half of the amount will be taken out of the club treasury and the remainder will be raised by a bond issue. Over \$3,000 has been turned into the secretary for 1912 dues, which is a record.

Toledo Garage Rates Increased—There has been an advance in the price of storage and other garage service in Toledo according to announcements sent out by several of the garage managers to their patrons. The assertion is made that no money is being made under the old rates and that many garages in the city have been operating at an actual loss. This is especially true of the exclusive garages which have no sales department to balance the account. It is claimed that during the past 2 or 3 years the cost of service has greatly increased, while the price of storage has remained the same. Garage charges here have been exceptionally low as compared with other cities of the same

class. Some of the local concerns will retain their old schedules for a time at least.

Bay State Chairmen—Chairmen of committees appointed by the board of directors of the Bay State A. A. for the present year have just been announced as follows: Show committee, Russell Green; revision of by-laws, A. P. Teele; runs and tours, W. H. Stevens; contracts and racing, H. H. Knepper; clubhouse, Chase Langmaid; entertainment, A. B. Henley.

New Orleans Motorists Active—Eight hundred owners of cars signed a petition which was presented to Mayor Behrman of New Orleans, La., asking that the city authorize the construction of a shell road to the park at West End, and that certain bridges be erected to facilitate travel over the canals which connect Lake Pontchartrain with the Mississippi river.

Another Wisconsin Club—Kenosha, Wis., is to have a motor club soon. A number of leading owners, headed by Russell H. Jones and Z. G. Simmons, are about to form a temporary organization, and when this is made permanent, affiliation will be made with the Wisconsin State Automobile Association. Kenosha is a city of 23,000 and the seat of the Thomas B. Jeffery Co.'s Rambler plant, the Badger Brass Mfg. Co.'s Solar lamp works and numerous other enterprises directly connected with the motor industry. One of the first objects will be the establishment of a clubhouse.

Ohio's January Report—According to the report of the Ohio state registrar of motor cars for the month of January, 1912, 942 cars were registered by private owners and 758 dealers and manufacturers were registered. There were 16,955 gasoline and 2,287 electric cars registered. Chauffeurs to the number of 3,000 were registered. The total receipts for the month were \$108,615.50 as compared with \$89,359 in January, 1911. During January, 1911, 16,600 cars were registered while the total for January, 1912, was exactly 20,000. A large part of the receipts will be turned

over to the state highway department for the building and repair of the state's highways.

Chicago Club Election—Ira M. Cobe was elected to the presidency of the Chicago Automobile Club for the seventh time at the annual meeting last week. The rest of the ticket which went in without opposition was made up as follows: First vice-president, T. J. Hyman; second vice-president, J. T. Brown; directors for 3 years, T. J. Hay and S. M. Rogers; for 2 years, M. A. Ross and W. S. Bogle; for 1 year, Charles Herendeen and F. A. Yard.

New Washington-Baltimore Route—In view of the fact that the Washington-Baltimore boulevard is to be under repair during the coming summer, motorists of this city are delighted with the new route to Baltimore that has just been laid out by John F. Mixer, one of the Automobile Blue Book route-makers. The route is via Olney, Sandy Springs, Ashton, Laurel and Relay. The distance is about 56 miles and the road is said to be one of the best leading out of Washington.

Dealers Co-operate on Contests—That contests can be supported by co-operation on the part of dealers is shown by the announcement that four Pope-Hartford agents have combined and have made an entry in the 500-mile race at Indianapolis. This entry is independent of the factory, the four agents interested being Frank P. Fox, of Indianapolis, J. L. Russell, of Chicago, P. Peterson, of Davenport, Ia., and Emil Estberg, of Milwaukee. No driver has been selected as yet.

Improving Taxicab Service—The American Telegraph and Telephone Co. has just installed a city wide telephone system for the Pittsburgh Taxicab Co., which is the most unusual in the country. Call boxes have been placed on telephone poles throughout the city with a central station in the office of the taxicab company; the system working like that of fire alarm and police systems. The purpose is to permit chauffeurs of the company to communicate at once with the office after they have discharged a fare and receive orders where next to report and thus avoid many miles of dead hauls. The taxicab company reports that it is securing 25 per cent more efficiency since the system was installed.



America Gaining a French Foothold

PARIS, Feb. 2—Imports of American cars into France have increased 228 per cent during the year 1911, while French exports to America have dropped 21 per cent. This is brought out in the government returns for motor-car business during the year 1911. The French export business is practically stationary, for compared with 1910 there has been the slight decrease of .42 per cent. On the other hand imports from other countries, principally America, have increased 32 per cent. French business has decreased with England 22.3 per cent, with Russia, Italy and the United States. It has increased with Germany, Belgium, Switzerland, Spain, Turkey, Brazil, Algeria and the small countries not given an individual classification.

The greatest number of foreign cars sold in France are supplied by England, Germany coming next, followed by Belgium and America practically equal, with Italy fourth and Switzerland a poor fifth. In 1910 the proportion of motor car imports to exports was 5.4 per cent; in 1911 the proportion had increased to 7.2 per cent. From a French standpoint the situation is not at all assuring, for it shows that while practically all nations, and particularly America and England, are increasing their exports, the French foreign business shows a slight backward movement. It is this change of fortune which is largely responsible for the modified attitude of the French manufacturers towards racing and shows. They realize that they are losing ground and therefore cannot afford to neglect any opportunity to bring themselves and their wares more prominently before the attention of the world.

The American firms now doing business in France are Ford, Reo, E-M-F, Mitchell, Everitt, Packard, Peerless and Pierce. The two last named are principally interested in maintaining spare parts depots. The English companies maintaining French establishments are Daimler, Rolls-Royce, Austin, Sunbeam and Wolseley.

ARMY TRUCKS IN TEST

Washington, D. C., Feb. 13—Somewhere between Washington and Richmond three motor trucks, a White, Sampson and Autocar, are fighting the snow and ice-covered roads on the first long distance army motor truck test. The caravan is under the observation of Captain Alexander E. Williams, Nineteenth Infantry, who, while on duty in the quartermaster general's department as a detailed officer, was engaged in the development and encouragement of designs of motor trucks for military use. The White and Sampson trucks are owned by the government.

Captain Williams expects to complete the

Reports from Paris on Exports Show Alarming Falling Off in Business Done—Yankee Army Trucks Start Long Test

trip within 4 weeks, but that depends entirely on the state of the roads. The route extends from Washington to Fort Benjamin Harrison, Indiana, by way of Richmond, Va., Raleigh and Charlotte, N. C., Atlanta, Ga., Chattanooga, Nashville, Tenn., and Louisville, Ky. The tests will be continued during the coming summer by the addition of other vehicles submitted by the builders, and it is intended to have the trucks operate in connection with troops in the field in order to ascertain the reliability of the system of transportation in connection with the supply of commands separated from their stations.

The 1,300-mile trip is calculated to test the vehicles, since the route includes mountainous country and roads where there is likely to be a heavy grade.

NEW ORLEANS MEET OFF

New Orleans, La., Feb. 12—A consultation with the weather man resulted in the management of the Burman-Matson races calling off the meet and cancelling the agreements with a number of out-of-town drivers, who had contracted to take part in the speed contests February 17-18. As the calculations of the meteorological station indicate continued unsettled atmospheric conditions this week, the races were abandoned.

JERSEY PERMITS CHAINS

New York, Feb. 14—Special telegram—Chains can be used in New Jersey on motor car tires as soon as Governor Wilson signs the bill passed yesterday by the lower house. The bill already has passed the senate. It provides that nonskid chains may be used where necessary to save life, a sufficiently broad condition to include pretty general use where the roads are slippery. Tire chains have not been permitted in New Jersey by law since the present motor vehicle law was enforced.

The reciprocity measure with no reference to power of attorney also had easy sailing in the lower house, passing by a vote of 44 to 13. The measure calls for 15 days a year of touring privilege to non-residents, which is practically the length of time asked for by the various motor organizations.

CONFER ON CONTESTS

New York, Feb. 14—Special telegram—Practically every factor in the question of official administration of motor contests was represented at a meeting here yesterday. The Manufacturers' Contest Associa-

tion, the American Automobile Association and a number of individuals associated with one or the other phase of the matter attended. The future of contests was up for consideration in detail prior to the execution of the contract that will shape the ends of sport in the immediate future.

Both branches agreed that the contract should be so framed as to bring about the greatest measure of good to the industry that may be derived from contests and naturally the discussion centered mostly upon who should be the men to head the contest governing body. The availability and qualifications of a number of tentative candidates were considered and a definite announcement of the execution of the contract and the selection of a chairman probably will be made next week.

ORGANIZING THE CHAUFFEURS

Syracuse, N. Y., Feb. 10—A. J. Seaton and Howard H. Jones, of Utica, will address the Syracuse Chauffeurs Club here next week, upon the subject of affiliation with the Chauffeurs Federation of America, which organization they founded and which now has thirty-seven branches in New York state, Pennsylvania, Connecticut and Massachusetts. The founders explain that the organization is in no sense a union, having no intention of fixing a time or wage scale. Its objects are given as the seeking of legislation in the interests of drivers, furnishing positions, educating chauffeurs to take better care of machines, and to protect members by insurance against accident and sickness. The organization was founded at Utica, N. Y., in August, 1910, and secured a year ago the passage of an amendment to the state highways law reducing the annual tax on chauffeurs.

MADISON SQUARE GARDEN SOLD

New York, Feb. 14—Special telegram—Madison Square garden was sold today for \$3,500,000 by the Madison Square Garden Co. to the F. & D. Co., and the building will be continued as a show place for at least 1 more year.

RECEIVER FOR VIRGINIAN

Richmond, Va., Feb. 14—Special telegram—The Richmond Iron Works Corporation, manufacturing the Virginian, has been thrown into the courts and a receiver appointed. The corporation filed a voluntary petition in bankruptcy in the United States district court yesterday and Judge Edmund Waddill, Jr., appointed H. D. Eichelberger receiver. The debts are placed at \$67,577.96 and assets at \$111,351.90. The concern owns real estate valued at \$75,000. The creditors are mostly local firms and individuals and are protected.



Legal Lights and Side Lights

WOULD INCREASE BAY STATE FEES

IT will be news probably to the motorists of the Bay State to know that Governor Foss, of Massachusetts, has under consideration a proposition to send a special message to the legislature relative to raising the motor car fees that exist at present. It was rumored before the inaugural that one of the points that would be referred to in the annual message would be increased motor car fees.

Mayor Fitzgerald, of Boston, was disappointed when there was no reference to it, for he had talked the matter over with the governor. He has talked with him since. Now the governor is studying out facts and figures submitted by the highway commission relative to the question to form a basis upon which to urge an increase.

Before the governor sends in a message on the subject the motorists feel that it would be a very good plan to find out what they think about it. And by motorists is not meant the minority that drive the big cars, and who have been blamed for road destruction for which all owners of cars pay something.

Anyone may go and ask a dozen or twenty or fifty men who own high-powered machines whether they favor an increase in the fees and the majority of them will say that they do. Why not? The increase from them will amount to a few thousand dollars while the big bulk of the money will come from the owners of the small cars because they form the majority.

So when one considers that by paying \$5 extra the men with lots of money will be saving a great deal more in property taxes, with thousands raised from the motorists it means less from the state of course, and the less the state has to raise naturally the lighter the burden on those who pay a good sized property tax.

Because Mayor Fitzgerald wants to get a share of the money paid into the state by motorists to aid in maintenance for the metropolitan and Boston park roads, while the highway commission does not want to hand over any of the money it now gets yearly is no reason why the motorists should be squeezed to produce additional funds, it is argued. And Governor Foss should give this phase of the question much consideration before he recommends any legislation.

There also should be considered the revenue from motor cars in Massachusetts the past few years, and the amounts available for road maintenance from this fund. In order that one may get a good idea of it here are some figures spent on road maintenance that are interesting.

Spent from state revenue, approximately 1909, \$247,084.50; 1910, \$214,561.45; 1911, \$200,000.

Spent from motor car fees, 1909, \$154,131.01; 1910, \$303,627.03; 1911, \$300,000.

These figures show that the greater amount now spent upon road maintenance comes from the motor car fees. The sum nearly doubled in 1910 over 1909, and with the increased registration this year the fees will produce a greater revenue, than was received from 1911.

ANOTHER KENTUCKY BILL FILED

Another motor regulation bill has been introduced in the Kentucky legislature. This measure is indorsed by the Louisville Automobile Club and follows the Newcomb bill which was introduced recently. The chief objections advanced by motorists against the act proposed by Senator Newcomb is that it provides that the owner of a car shall be liable for civil damages as a result of accident caused by the machine even if the owner had not authorized the car to be taken out. It also contains a clause that when a motor car meets a horse-driven vehicle the car shall be at once stopped and the driver shall get out and lead the horse past.

The bill favored by the Louisville club was introduced in the house by Representative Charles H. Knight and in the senate by Senator Mark H. Ryan. The measure contains the licensed chauffeur feature and under it the city of Louisville may realize on licenses. All speeding is rigorously forbidden. On the country roads the maximum speed is fixed at 20 miles an hour, but whenever a car is approaching a street corner or curve in the road a maximum of 8 miles an hour is prescribed. Every person acting as a chauffeur shall be required to secure a license from the secretary of state, and it is provided that no person under 18 years of age shall discharge this duty. A fine of \$50 to \$500 is to be imposed upon anyone operating a car while intoxicated.

The interest taken in the bill proposed by Mr. Newcomb has been somewhat intensified by the numerous accidents lately and by various decisions of the local courts upon the subject. Many of the members of the legislature are understood to favor rather drastic legislative action, but Louisville motorists and dealers believe the situation can best be met by adopting the Louisville Automobile Club's bill.



CASE OF IMPORTANCE DECIDED

In his decision rendered at York, Pa., in the case of Mrs. Rebecca Jamison, of West Fairview, against the county of Cumberland, Justice Von Moschizisker, of the state supreme court, decided in favor of the county, against Mrs. Jamison and affirmed the finding of the superior court. The opinion is of state-wide interest, affecting more than \$1,000,000 in damage suits all over the commonwealth.

Several years ago East Pennsboro township made application for state aid in improving the state road running from Lemoyne to West Fairview and beyond. In the work of improving the highway the grade was raised 4 feet at the property of Mrs. Jamison, near West Fairview, and because of this change of grade she brought action against the county for damages, asking the sum of \$800.

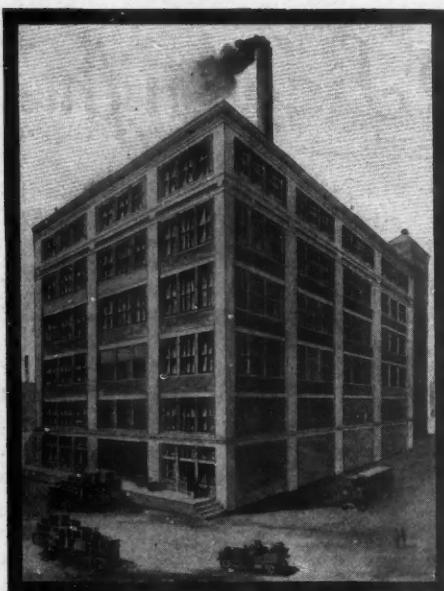
The act of assembly of 1905 permitted the recovery of damages in instances like this, and Attorney J. W. Wetzel asked the court to appoint viewers in the case. This the court refused to do, but indicated that the plaintiff had her constitutional right to sue for damages.

An appeal was taken by the plaintiff's counsel to the superior court of the state, in the matter of asking for viewers, and the negative decision of the Cumberland county court was affirmed. Subsequently a case stated was agreed upon and the Cumberland county court gave judgment in favor of the plaintiff on the case stated. The county then took an appeal from this decision to the Superior court. Before the road was completed the legislature passed an act, in 1907, destroying the provision of the act of 1905 permitting the recovery of damages resulting from public improvements. The superior court reversed the lower court.

The highway department became interested in the case as it would be effective in counties all over the state where road improvements were in progress.

FIGHTING SPECIAL TAX

The right of the city of Montreal to impose a special license tax on motor cars is brought into question in an application for a writ of certiorari entered before the superior court by the Canada Auto and Taxi Co., Ltd. According to the petitioner's declaration the city of Montreal recently seized three of the company's taxicabs on the grounds of non-payment of license. The company represents that it is willing to pay the regular business tax, but it denies the right of the city authorities to impose a special license charge on each car. Such power it claims appertains solely to the provincial authorities.



HARTFORD SUSPENSION CO.'S PLANT AT JERSEY CITY, N. J.

JOINS Chicago Colony—The S. K. F. Ball Bearing Co. has opened a branch office in the Heisen building, Chicago.

Not Classed as Chauffeurs—The Pennsylvania state highway department has been advised by the attorney general's department that drivers of delivery trucks for department stores and similar establishments are not required to take out chauffeurs' licenses if operating motor vehicles is a part of their duties.

Aristos Adds Disco Territory—The Aristos Co., which has eastern territory for the Disco self-starter, has taken on the west also, retaining J. H. Palmer, Rookery building, Chicago, who formerly handled the line, to look after its interests. A statement that the line was the Delco was in error.

Bus Line for Washington—If plans now under way are carried through, a motor bus line will be established in Washington, D. C., on Sixteenth street, Massachusetts avenue, through the business section to the Union station and through the park system of this city. A company is being formed and plans are being outlined for the project. Horace H. Westcott, a real estate operator, is head of the new project.

Federal's New Plant—The Federal Motor Truck Co., of Detroit, is moving into its new plant which was formerly occupied by the Van Dyke Motor Car Co. The property is 200 by 800 and the building shown in the illustration is 60 by 512. There is room for the erection of two more buildings the same size. There is now on the property, besides the building shown, warehouses, test sheds and a large power plant capable of taking care of twice the present demands. The Federal company now is moving its machinery into the new plant and the combined equipment will give a capacity of at least 1,000 trucks a year. This is the third

Among the Makers

time since the organization of this company that it has had to seek larger quarters.

Death of W. A. Merriam—W. A. Merriam, for several years past advertising manager of the Warner Instrument Co., Beloit, Wis., died on the evening of Wednesday, February 7, after undergoing an operation for appendicitis.

Discontinues Making Colburns—The Colburn Automobile Co. of Denver, Colo., has discontinued the manufacture of the Colburn car and will devote the energies of its whole plant hereafter to the sale of the National, for which it is western agent. As its line of electric vehicles it handles the Rauch & Lang pleasure cars.

Has Big Electric Fleet—The Edison Electric Illuminating Co. of Boston has spent \$104,424 in the purchase and exploitation of motor vehicles to date, many of them being electrics. The company now has in use thirty-four cars and trucks using electricity and it is at work changing over its entire equipment of gasoline and horse-drawn vehicles to electric motor power.

More Detroit Truck Makers—New entrants in the Detroit commercial car field are the Cygnet Motor Co. and the Motor Truck Body Co. The former now is in the process of organization, and it plans to manufacture a light delivery and pleasure car. The promoters are not ready to disclose their whole hand yet. The Motor Truck Body Co. already is established in a plant at 320 and 322 Franklin street, and is beginning to fill orders for which it has contracts. It will manufacture bodies for motor trucks and light delivery cars. The officers of the company were formerly in the body department of the Packard company. Fred

Proctor is president; E. T. Haugsteer, secretary and treasurer, and Harry A. Carrier, manufacturing manager.

Westlake an Ad-Seeker—E. G. Westlake, for many years motor editor of the Chicago Evening Post, has branched into the advertising field for the same publication, handling the news as well as the business end of his department.

Federal Gives a Banquet—The annual banquet of the directorate of the Federal Rubber Mfg. Co. to its sales agents and traveling representatives was held in Milwaukee on February 6. Covers were laid for thirty-two. The discussion of sales methods and business policy was led by President B. C. Dowse and Herbert A. Githens, sales manager and vice-president; Richard Ward, secretary and treasurer, and James Kepperley, general counsel, also made addresses.

Helps Hide Industry—It is reported by hide dealers in Texas that the development of the motor car business has created a new and extensive demand for the higher grade hides of Texas cattle. These hides are used for manufacturing tops of the higher-priced cars. It is claimed that this new use to which hides are being put has caused them to advance materially in price. The hide business is an important one in several of the larger cities of Texas. For many years San Antonio has been a large concentrating point for cattle, sheep, goat and deer hides. In all the towns of the ranch region local merchants handle these hides and frequently they make large profits out of the business. Large hide establishments are also situated at Houston and Fort Worth. Recently a syndicate of Boston, Mass., men started a hide business at Galveston, with C. R. Gray as manager. This new con-



PLANT OF FEDERAL MOTOR TRUCK CO. IN DETROIT



cern gives special attention to the purchase of hides suitable for making tops for motor cars, it is stated.

Elba Generator Discontinued—In Motor Age, February 1, page 43, was published a statement that the Elba generator for electric lighting was still being marketed. This was a mistake, the facts being that the Willard Storage Battery Co. discontinued the manufacture of this generator for electric lighting purposes and manufactures a storage battery specially intended for this work.

Arthur Back at Ohio Factory—B. D. Arthur, who for the past 2 years represented the Ohio Motor Car Co. of Cincinnati, on the Pacific coast as district manager, on February 1 returned to the home office for the purpose of assuming charge of the commercial car department. The Ohio company intends starting an active campaign on its 1,000 and 1,500-pound light delivery cars.

Ford's Frisco Branch—The Ford Motor Co. of Detroit, which recently established a branch in San Francisco, is occupying a structure at the corner of Van Ness Avenue and Fell street. The building, while of only a single story, is spacious, covering a large ground area. In addition to a large show-room extending the entire frontage of the building there is a big shop and temporary storeroom in the rear.

Recent Michigan Incorporations—Among the recent incorporations reported by the secretary of state of Michigan are the following: Marquette Motor Co.—name changed to the Peninsular Motor Co.—Saginaw, \$300,000 capital; Kelly-Springfield Tire Co., New York and Detroit, \$10,000; Barber Motor Sales Co., Detroit, \$6,000. The General Motors Export Co., Detroit, has increased its capital

stock from \$10,000 to \$100,000, and the Aeroplane Construction and Supply Co., Detroit, from \$4,000 to \$50,000.

Attracting a Car Maker—The Belleville, Ont., city council has passed a bylaw granting a site of 10 acres and a fixed assessment for a term of years to the United Motor Car Co., which proposes to erect a plant in that city. The bylaw will have to be ratified by the ratepayers.

Krit Branch in Philadelphia—The Krit Motor Car Co. has opened a factory branch in Philadelphia, through which it will conduct all its business in the state of Pennsylvania hereafter. Henry Lansdale, formerly with the Fiat company, will be branch manager in full charge of the entire district.

Helping the Garage Men—Recommendations made by the building inspector and the assistant engineer commissioner have prompted the district commissioners to amend the building regulations so as to remove many present difficulties in the way of the establishment of public garages in alleys. The present building regulations require that two-thirds of the owners of business property within a radius of 90 feet of the proposed garage shall be counted as consenting. Under the amended regulations all property, within the necessary radius, occupied and used as a private stable or private garage and all alley lots not occupied by alley dwellings and on which under the law no alley dwellings could be built shall be counted as consenting. "It is a fact," said Captain E. M. Markham, the assistant engineer commissioner, "that the establishment of public garages and shops for motor car repair is now surrounded, under the regulations, by considerable difficulties. The large and persistent increase in the number of cars and the established



CHARLES E. REISS & CO. AND AMERICAN MARION SALES CO., NEW YORK

fact of their permanency suggest the desirability, if not the actual necessity, of relieving the situation of some of its present restrictions."

No Canadian Mitchell Branch—The Mitchell-Lewis Motor Co. of Racine, Wis., which, it was rumored, would establish a branch factory in Canada, has definitely decided not to do so. It is the opinion that it is cheaper to build the cars in the states and pay the duty for shipments into Canada.

Fire at Ypsilanti—The Hawkins house garage, at Ypsilanti, Mich., owned by Theodore Schaible and Emanuel Wiedman, doing business under the name of Schaible-Wiedman Motor Co., has been destroyed by fire. Twenty-one cars were burned besides tools, furniture and fixtures. The total loss is estimated at \$15,000.

Canadian Concern Expanding—Shareholders of the Russell Motor Car Co., Limited, of Toronto, will be asked to ratify a proposal to increase the capital stock from \$1,600,000 to \$2,000,000. The new issue would be of the 7 per cent cumulative preferred convertible shares. In their notice to the shareholders the directors make the announcement that they have decided to enter the commercial vehicle field, adding the manufacture of delivery motors and motor trucks to their present line of passenger vehicles.

Woman Selling Trucks—The only woman truck dealer in the United States has begun operations in Denver as a member of the United States Sales Co., a corporation formed there for the purpose of distributing the output of the Wichita Falls Truck Co. throughout the entire United States. The woman is Mrs. M. C. McIntyre of Denver; the other incorporator of the company is Myron H. Aitken of Fort Collins, Colo. They have taken the salesroom occupied until recently by the Inter-State agency at 1240 Broadway.



NEW SAN FRANCISCO BRANCH OF FORD MOTOR CO.



The Motor Car Repair Shop

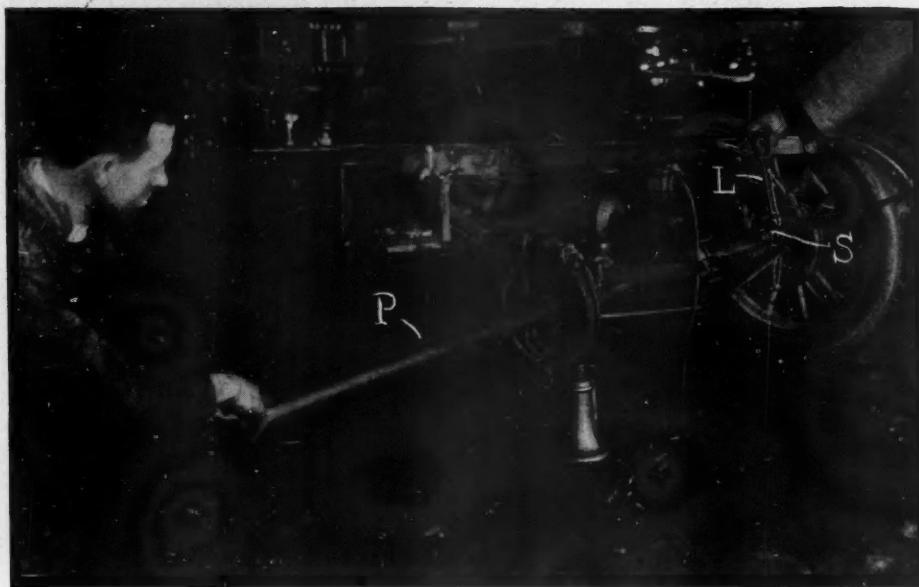


FIG. 1—SHOWING HOW A SLIGHTLY BENT AXLE CAN BE STRAIGHTENED

IN Fig. 1 is shown a method employed in the Maxwell branch, Chicago, of straightening the driving shafts of a rear axle. When a driving shaft of an axle is bent, as a result of skidding into a curb or dropping off of the jack when a wheel is removed, etc., the wheel of the car when in operation will tend to wobble in an unsightly manner and the brakes will fail to work efficiently. To overcome troubles of this nature the Maxwell repairman uses a straightening tool which consists of a long iron pipe **P**, into the end of which a portion of an old turned down wheel hub has been fitted. The wheel hub has a tapered hole in it which conforms to the shape of the tapered end of a shaft, so that a good effective grip may be obtained upon it. By means of this tool and the long leverage obtained through its use, it is possible to straighten a slightly bent shaft after simply removing the wheel and without disassembling the rear axle, or heating the driving shaft. Of course, where a serious bend exists it would not be safe to use this method of straightening the axle without applying heat to the shaft.

The same illustration shows how a buckled spring shackle should be brought back into its normal position. It sometimes happens that when a car strikes a severe bump in the road or a thank-yer-m'am, the body will be thrown up into the air in a manner that will cause the spring shackle to flop down below the horn of the frame, as shown at **S** in the illustration. To bring the shackle back into its normal position is a very simple operation, if properly executed, one having but to insert a lever or bar **L**, as indicated, and pry the shackle back into its

proper position. If the fenders are in the way, so that the lever cannot be applied as shown, it may be inserted from below and a pushing strain instead of a pulling one applied.

Get the Habit

Habits are formed by constantly repeating certain thoughts or actions; and once the habits become fixed; the thoughts or actions become automatic and cease to be a hardship or inconvenience. The following habits should be developed by every operator of a motor car.

See that the car always is thoroughly lubricated and supplied with gasoline and water. This should be done before starting out on a run.

See that all nuts, bolts and screws are tight. This is best done once or twice a week while going over the entire car with the hand oil can, and while filling the grease cups provided at various points.

Systematic Repair Department

One of the smallest but at the same time most thoroughly equipped and systematically arranged machine tool rooms in the city of Chicago, is in the repair department of the Alco branch, the greater portion of which is shown in the illustration Fig. 2. At the left in this illustration is a power hacksaw **H**. Near it is shown a large drill press **D**. To the right and behind the large drill press is a stand or table, on which tools and various machine tool fixtures may be conveniently rested; and on the partition at the rear is shown how the rack is formed for the storage of raw bar stock, etc. In the extreme background is shown the shaper **R**, and to the right of it an emery grinder and buffing machine **E**.

Special attention is called to the neat and orderly arrangements provided for the drills and wrenches on the wall at the right. There is a very large 14-inch lathe **L** close to the wall; while in the center of the floor, in a little more convenient position, is a 12-inch lathe; the latter being more conveniently situated because it is most often used. The entrance to this room is at the left, just forward of the hacksaw; and on the opposite side of the door, not shown in the illustration, is a workbench with a vise and a small high-speed drill press upon the end near the door. Above the workbench at the opposite end is another tool rack for taps, dies, reamers and sundry tools of that nature.

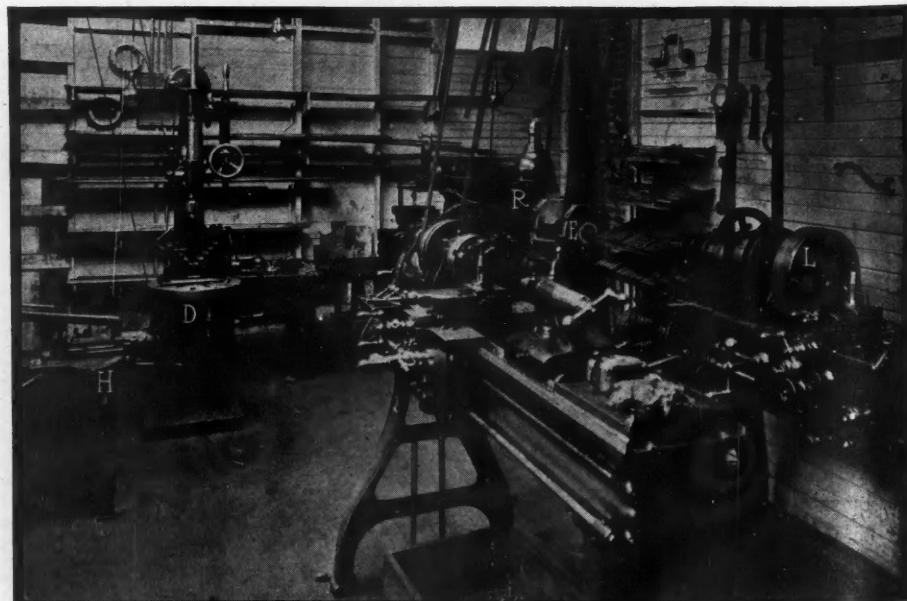


FIG. 2—VIEW OF MACHINE TOOL EQUIPMENT OF ALCO REPAIRSHOP, CHICAGO



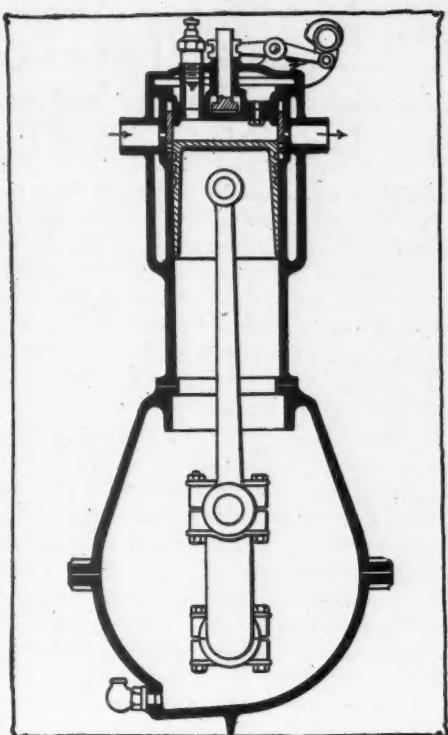
Current Motor Car Patents



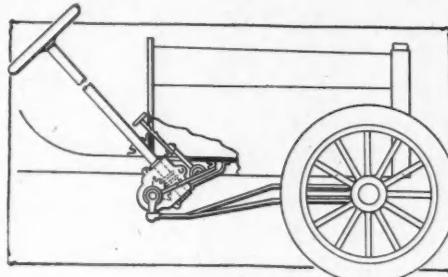
NAGEL CARBURETER—No. 1,016,169, dated January 30; to William G. Nagel, Toledo, O.—This patent pertains to a carbureter having a liquid fuel valve, a suction valve, a lever movable by opening movement of the suction valve to impart opening movements to the liquid valve adjustably associated with the liquid fuel valve and co-acting with the lever to communicate movements from the latter to the former, this means being adjustable both to regulate the minimum opening of the liquid fuel valve and the opening movements thereof, and means without the carbureter operable to adjust the adjustable means to regulate the minimum opening of the fuel valve but permitting free reciprocal movements of the adjustable means with the liquid fuel valve.

Beckwith Inner Tube—No. 1,016,122, dated January 30; to Walter C. Beckwith, Fostoria, O.—The Beckwith inner tube for tire casings comprises an annular rubber tubular envelope having an annular rubber partition adjacent to its inner side to form an inflatable and deflatable annular air chamber, a thick wall non-collapsible, annular flexible tube located between the partition and the outer side of the envelope, the inner periphery of the tube resting against and secured to the inner partition, and an elastic core filling the space between the tube, the partition and the outside of the envelope as illustrated below.

Forest Internal Combustion Engine—No. 1,015,948, dated January 30; to Ferdinand Forest, Suresnes, France—This patent relates to an internal combustion engine having in combination a cylinder comprising an upper portion of larger diameter than the normal bore of



FOREST INTERNAL COMBUSTION ENGINE



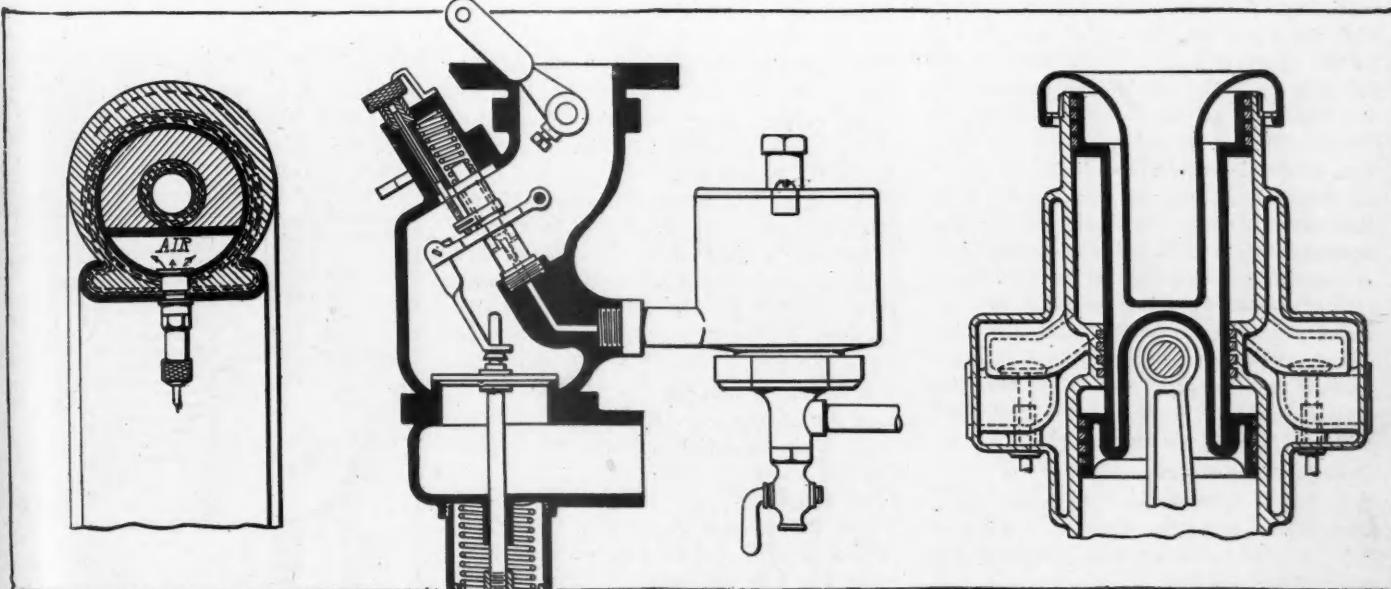
CHAPLAIN STEERING GEAR

the cylinder, this cylinder being provided with inlet and outlet ports communicating

with the enlarged upper portion, an annular distributor reciprocatingly mounted within the enlarged upper portion and provided with openings adapted to move into and out of registry with the ports depending upon the position of the distributor relative to the cylinder, means operatively connected to the distributor and actuated by the engine for reciprocating this distributor, and means of protecting the last mentioned means from the effects of the explosion of the gases within the cylinder as illustrated herewith.

Chaplain Steering Gear—No. 1,015,295, dated January 23; to George H. Chaplain, Leavenworth, Kan.—The steering gear to which this patent relates includes a quadrant having an elongated hub, independent shafts journal in the ends of the hub, clutch members carried upon the shafts for alternate interlocking engagement with the hub, holding means connected to the clutch members for interlocking one of them normally with the hub, and a lever connected to the clutches for alternating the interlocking of the clutches.

Meaker Explosive Engine—No. 1,015,502, dated January 23; to John W. Meaker, Detroit, Mich.—The Meaker explosive engine comprises an open-ended cylinder having an inner annular flange between its ends, a piston reciprocable through the flange having an open outer end and a closed inner end both enlarged to fit the cylinder, a jacket forming an air space over the cylinder end with its lower end opening directed toward the lower end of the cylinder, and a diaphragm of less diameter than the piston bore secured in the cylinder concentrically with the piston near the limit of outward motion of the inner end thereof by a tubular extension of the jacket.



BECKWITH INNER TUBE

NAGEL CARBURETER DESIGN

MEAKER EXPLOSIVE ENGINE

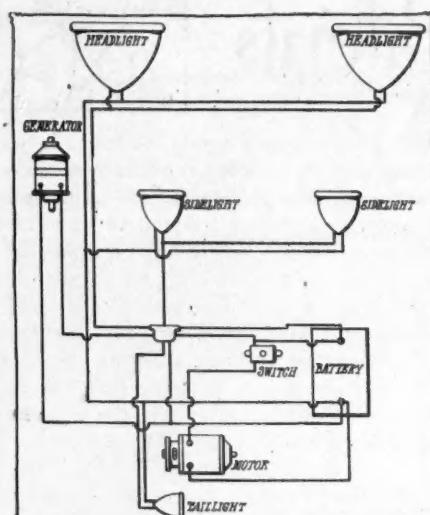


FIG. 1—HARTFORD ELECTRIC STARTING AND LIGHTING SYSTEM

Hartford Electric Starter

IN Fig. 1 is illustrated the connections of the Hartford electric system for starting and lighting the motor car. It will be seen that it differs from the usual type of electric starter in that the motor and generator are not combined but are two separate units. The starting part of the system consists of a 12-volt motor which drives a combination worm and spur gear. The spur gear is keyed to the main shaft between the engine flywheel and the gearbox and is fitted with a single clutch and ball bearings. In mesh with the motor is a worm gear whose reduction is 25 to 1. The spur gear reduction is 5 to 1, making a total gear reduction of 125 to 1. The current is applied with a simple push button which is quite feasible in this installation as only about 180 watts is required for starting. The motor is very high speed, about 7,000 revolutions per minute, and is designed to turn the engine at about 50 revolutions per minute. As soon as the engine starts, the clutch on the main gear releases automatically. To prevent damages from back kick the worm gear instead of being keyed to the shaft is held in position by a little friction disk and spider spring similar to the one used on the Truffault-Hartford shock absorber. The combination magnetic cutout and lighting switch on the dash disconnects the dynamo from the battery when the speed of the car becomes less than 10 miles an hour. There is an electric choking system by which the generator is self-regulating so that there is no damage to the battery at high speed. This charges the 12-volt storage battery automatically and the current for electric lighting, horn, starter and ignition are taken from this supply.

Skinner Recoil Check

In Fig. 2 is illustrated the recoil check manufactured by the Skinner & Skinner Co. It consists of a spiral spring of flat steel, the outer end of which is attached to the car frame or upper portion of the spring and the inner end carries an arm

Development Briefs

New Things in Accessories—Pneumatic Suspension Design, Tire Pressure Gauges, Tire Fillers, Car and Motor Heaters, Valve Spring Removers, Gasoline Level Alarms, Theft Preventers and Improved Tools

which is connected by a strap to the axle. A universal clamp connection obviates the necessity of drilling holes in the frame and makes installation easy. The clamp fits the lower channel of any pressed steel frame and is secured by one hexagon nut. The shock absorber is made in five sizes for different weights of cars.

Bryant Spring Remover

A very handy tool for compressing valve springs to permit removal of valves for grinding and also for replacing valves has been brought out under the name of the Bryant Spring Remover and is manufactured by Stevens & Co. The action occurs between the coils of the spring, releasing all pressure from the valve spring and permitting the valve spring disk and key to be removed. A lock arrangement is

reached. The device is of pencil shape and is provided with a graduated scale which can be set at the proper pressure. The tire is then pumped up until the whistle blows. The whistle is operated by pressure inside of the tire, which, when it reaches the figure at which the indicator is set, raises the valve so that the air, instead of being forced into the tire, makes its escape through the whistle tube and warns the operator that the pressure has reached the proper amount.

Kellogg Indicator

The tire pressure indicator made by Kellogg Mfg. Co., Rochester, N. Y., is of the dial type but is designed to be screwed on to the valve stem of the tire. It opens the valve automatically and indicates the pressure therein.

Hammond Tire Gauge

A very novel type of tire indicator is manufactured by the Stevens Co. and is in appearance much like a watch, the dial being of the regular watch-case style so it can be carried in the vest pocket. The feature of this design is that if the pointer flies beyond the correct pressure it will settle back to the true tire pressure instead of sticking at the higher point, as is often the case.

Prince Nut Lock

Simplicity is the chief feature of a new nut lock manufactured by a new company whose moving spirit is J. D. Prince, treasurer of the Prince Tire Co., New York. The construction and use of the nut lock is illustrated in Fig. 4, from which it will be seen that the lock very much resembles a washer. It will be noted that on the inner side it has a circle tapering from a given point of one plane to its finishing point, the circle crossing the threads of the bolt. The metal of the lock is of a slightly softer nature than the thread of the bolt, thereby forcing it to become

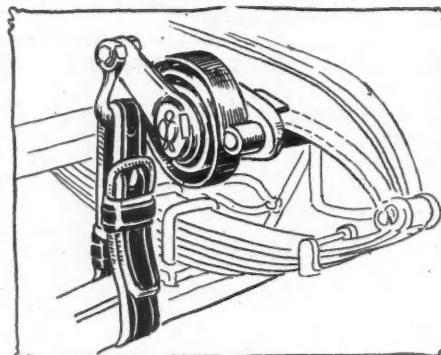


FIG. 2—SKINNER RECOIL CHECK

provided for holding the spring under compression until the valve is replaced. The device consists of a steel upper jaw on a toothed rod over which there is a sliding piece moved up and down by a gear. The steel engaging device on the end of the lifting rack is a special feature, as it is designed to pass in between the coils of the spring. It is illustrated in Fig. 3.

Skinner Pressure Register

The Skinner & Skinner Co. is making a direct-reading pressure gauge, the feature of which is that it is capable of 200 pounds overload above the highest pressure specified by the car makers, which prevents a momentary high pressure causing a permanent set of the indicator hand. The device is attached to the tire valve stem by means of a large knurled coupling. This operation automatically opens the tire valve.

Sigar Indicator

The Tryon Auto Pump Co., New York, is producing a unique tire pressure indicator which is particularly adapted to use with power tire pumps. It is arranged to blow a whistle when the required pressure

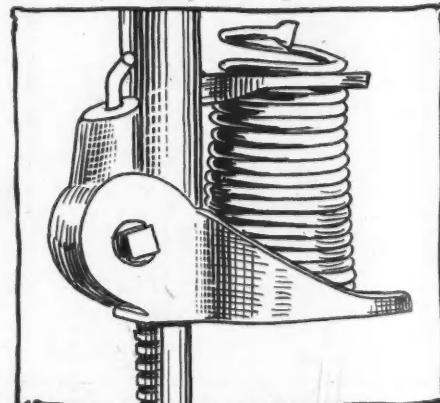


FIG. 3—BRYANT SPRING REMOVER

Novelties for Motors

Latest Arrangements for Starting the Motor, Including Electric, Gasoline, and Acetylene Methods—Novel Kerosene Gas Producer for Running Engine on Coal Oil or Alcohol—Attachment to Improve Mixture

wedged in the thread groove between the upper part of the nut and the thread above it. This action not only stops the movement of the nut caused by vibration but tightens it to the lock under continued jolting. The nut lock can be used as a lock washer should there not be sufficient space for the thread of the bolt above the nut. It may be used below the nut and another one above the nut, but its greatest value is to apply it above the nut for locking it in place.

Stanley Mixer

A device for improving the carburation of the air entering the manifold is marketed by Charles W. Jacobs & Allison, New York, under the name of the Stanley mixer. This is an automatic attachment placed in the intake manifold between the carburetor and the engine and consists of a short flanged tube with an agitator mounted centrally on a ball-bearing shaft so as to rotate freely in the tube. The agitator is a stiff wire formed into a short coil with a pair of very slightly tilted blades, as shown in Fig. 6, the whole forming a device which is set in rapid rotation by the passage of the stream of gas-laden air through the intake pipe. The whirling spiral is designed to intimately mix this gaseous fluid, not only thoroughly stirring up the gasoline vapor and air, but evaporating all entrained globules of liquid gasoline which would otherwise escape complete combustion and be thrown out at the exhaust. The device is claimed to save from 25 to 40 per cent of gasoline.

Williamson Steering Wheel Lock

Prevention of theft or tampering with a car is provided by means of the Williamson locking device illustrated in Fig. 5, and manufactured by H. G. Williamson Co., Chicago. The device consists of a hinged steel strap which is clamped about one steering wheel arm and the throttle and spark levers and held by means of a

padlock. To lock the car, the front wheels are cramped in to the curb as far as possible, the gas and spark levers retarded or advanced as far as they will go, and the lock placed over the two levers and an arm of the steering wheel. If it is desired to leave the motor running idle, the device is placed over the stationary arm of the quadrant, and a steering wheel arm with the wheels cramped.

Portable Vulcanizer

The Imperial vulcanizer, made by the McGraw Tire & Rubber Co., of East Palestine, Ohio, is of the portable type in which the vulcanizing plate is heated directly by gasoline flame. The flame from the burning liquid impinges against conical projections and cylindrical walls of a cup or basin. The heat thus gener-

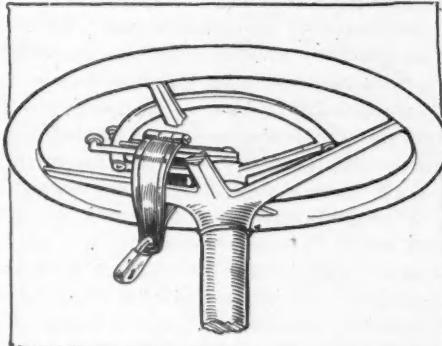


FIG. 5—WILLIAMSON STEERING WHEEL LOCK

ated in the plate is uniformly distributed over the face of the plate. When the combustion of the gasoline heats the cone and side walls to a higher temperature than desired, the flame rises higher above the conical pins and side walls of the cup, the space below being occupied by the gases which automatically dampen down the heat until the liquid fuel falls in temperature, causing the flame to drop lower and again heat the plate. This makes the temperature regulation practically automatic, the liquid fuel covering the bottom of the basin and surrounding the base of the conical pins keeps the heat from assuming serious proportions. The device weighs 3 pounds.

Essenkay Tire Filler

The S and K Tire System is marketing a tire filler intended to be placed in the casing of pneumatic tires. It does away with the use of inner tubes. The filler, called Essenkay, is an organic compound, grayish in color and light in weight. Its composition is a kept secret by the manufacturers. It is said that the material

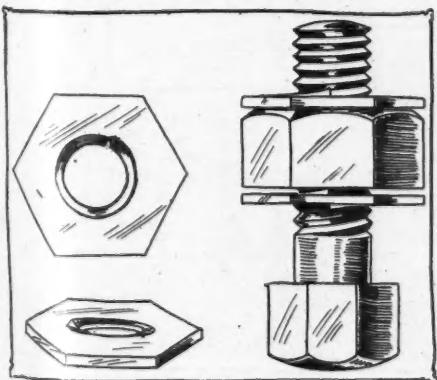


FIG. 4—PRINCE NUT LOCK

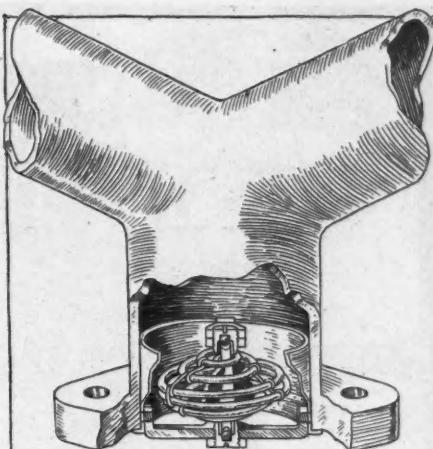


FIG. 6—STANLEY INTAKE MIXER

will withstand the severest cold and 200 degrees higher temperature than can be produced by fabric friction. It is claimed to be equally as resilient as air.

Day's Tire Filler

A tire filler which takes the place of the air in the tubes is made by the Iowa-Tire Filler Co. It is said to ride as easily as a properly inflated air tire. The tire filler contains no vegetable oils or chemical injurious to the rubber. It is forced into the inner tube in liquid form through the valve the same as air, under heavy air pressure. It is then baked under a heat of 150 degrees F. for several hours. The filler is expected to stand up to wear out from four to six casings.

Aeromore Horn

The Matador Tire and Vulcanizing Co. is marketing a new exhaust whistle for motor cars. The horn is so designed that it will sound on a pressure of 1 pound and is guaranteed not to clog up. It is the design of William E. Stevens.

Newmastic Tire Filler

The Newmastic Tire Co. is producing an elastic resilient material for replacing air in pneumatic tires. It is a patented compound manufactured in the form of a liquid. Tires are filled with the liquid in the same manner that they are inflated with air. The filling is injected through the valves. In a few hours the filling sets and becomes an elastic solid substance and the tires are ready for use.

Dahl Tire Filler

The Dahl tire filler is another substance designed to replace the air of pneumatic tires without forfeiting the resilience afforded by air. The filler is moulded when made to fit the different sizes of casings and can be used with any make of tire.

New Heater for Cars—The Reynolds Dull Flasher Co. has recently placed on the market a new heater for car bodies. In form it is a register set in the foot-board of the car in such manner that it throws the air around the driver's feet after passing through the hot radiator. It is very neat in appearance with polished brass face and so constructed that it is impossible for oil or grease to get through although the passage of air is perfectly

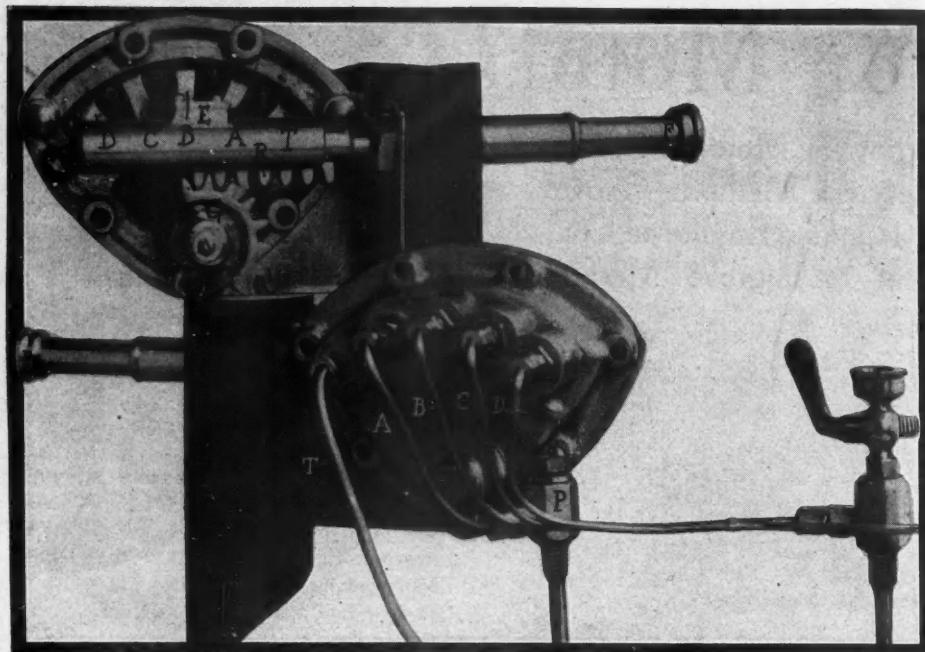


FIG. 7—TWO VIEWS OF OPERATING MECHANISM OF PANWOOD STARTER

free. The radiators are made in three sizes, 4 by 8 inches, 4½ by 12 inches and 5 by 16 inches. The amount of air passing through the register can be regulated at will or shut off entirely when not desired.

Hewitt Acetylene Starter

The Hewitt-Detroit starter, manufactured by the Hewitt-Detroit Starter Co., Detroit, Mich., is designed to relieve compression from one cylinder to another and replace in that relieved cylinder a mixture of acetylene gas and air put it under compression so that when fired it has a tendency to push the pistons downward instead of giving them a hammer blow. The arrangement consists of a valve and selector on the dash, to which acetylene is piped from the tank and from which it is run to the cylinder heads. The selector is used in combination with the Hewitt indicating system which is designed to locate the necessary cylinder to give the initial start and locate possible ignition troubles as well. The combination of indicator and selector gives individual control of each cylinder and makes it possible to charge and fire that one alone or, if necessary, charge the two following cylinders, thereby adding extra impulses to the initial start.

Runs Engines on Kerosene

An arrangement for converting the ordinary gasoline engine into a kerosene engine is in the form of a gas producer which will handle the less highly refined fuels such as ordinary kerosene or denatured alcohol. The producer is manufactured by the Kerosene Gas Producer Co., and the design is shown in Fig. 8. The producer is cylindrical in shape, about 6 inches in diameter, its length varying according to the horsepower of the engine and is attached in the same manner

as the muffler. In connection with it is the automatic control mechanism so that no attention on the part of the driver is required. The engine is started in the ordinary way on gasoline and after running for about 3 minutes, the kerosene is turned on and the gasoline turned off automatically. This is accomplished by means of the thermostat which also regulates the temperature of the gas entering the cylinders, thus maintaining control of the engine under all conditions of speed or load. It will be necessary to carry a small priming tank of about 1 gallon of gasoline. It is claimed that tests under variable conditions have demonstrated that the producer consumes from 10 to 15 per cent less kerosene than gasoline per horsepower, and as the former is about half the price, the economy readily

can be figured. The principle of operation is as follows: the producer is of the suction type in which the fuel is first atomized and then drawn by the suction of the engine through passages heated by the exhaust. The exhaust is said to be absolutely clean, odorless and colorless, which means perfect combustion, minimum fuel consumption and maximum efficiency.

Star Vehicle Washer

An overhead device for washing motor cars is the Star vehicle washer made by the Star Brass Works, Chicago. It is of the swinging arm type and is designed to be attached to the ceiling with the water supply coming immediately below the ceiling plate. Special pains are taken to prevent leakage at the ceiling joint.

Panwood Starter

One of the most recent starting devices is the Panwood starter, manufactured by the Panwood Mfg. Co., Detroit, Mich. This self-starter is of the type in which acetylene gas is admitted to all of the cylinders and exploded by a spark from the ignition system. The admission of the gas is through a distributor on the dash. The feature of the distributor is that it is supplied with a double protection against leakage or back-fire. It is illustrated in two views in Fig. 7. It will be seen that the distributor is operated by means of a pushrod extending through the dash, the operating mechanism being mounted under the hood. The push button usually is placed so that it can be kicked with the foot.

In detail, the construction involves a metallic case to which there are a number of leads, A, B, C, and D, one for each cylinder and one, T, for the connection to the storage tank. The pushrod F has on its lower side a ratchet R which engages with the segment of a gear G. Integral with it is a rotating finger E which trips triggers T, A, B, C, and

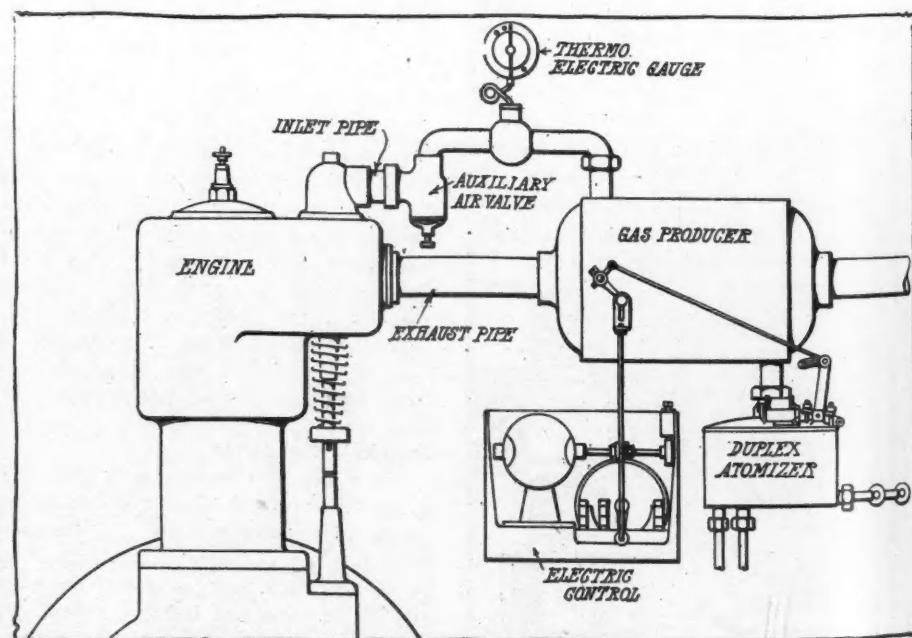


FIG. 8—ARRANGEMENT OF KEROSENE GAS PRODUCER FOR GASOLINE ENGINE

D, in succession, holding the first open. These triggers are tripped in the order named and open first the lead from the tank and then the leads to the cylinders in their firing order. The opening of the trigger in each case opens a spring-seated needle valve against the gas pressure. Special priming cups P and P₁ are fitted through which the gas is lead to the cylinders. It is said that a single charge is sufficient to spin the motor from twelve to fourteen times. On the return stroke of the finger it does not trip the triggers but slides past them.

Peerless Air Pump

The Peerless air pump, made by the Peerless Accessories Manufacturers, Chicago, is a four-cylinder hand-operated pump intended to be carried in the tool box and clamped on the running board for tire inflation. It has a capacity of 750 cubic inches of air per minute when the crank is turned at 80 revolutions per minute. The pump weighs 9 pounds and takes up a space of 9 by 3 by 7½ inches.

Sentinel Gasoline Tank Alarm

To notify the driver of a car that the gasoline in the fuel tank has reached a minimum level, there is being marketed the Sentinel gasoline tank alarm, handled by Zwillinger & Feldman, New York. The device consists of a standpipe extending 2 inches upward from the bottom of the tank. Through this the gasoline flows until the latter falls to the top of the standpipe, after which no more gasoline can flow through the standpipe and the engine stops from lack of fuel, signaling that gasoline for but 10 miles is in the main tank and leaving sufficient fuel to permit running to the next supply station. The reserve in the bottom of the tank is thrown on by turning a cock which

permits gasoline to flow from an opening near the bottom of the tank. The valve can be operated either by a handle as shown in the illustration, Fig. 11, or can be made to operate by a key so that the fuel supply can be locked.

Reflex Inspection Light

For locating trouble around and under the car and particularly for inspection of the interior of the engine cylinder there has been brought out a small storage battery flashlight in connection with which is mounted a small mirror to throw the light to the desired point. The device is made in several forms, the most useful one being a body of the usual flashlight type containing the storage battery with a rod extending from it, at the end of which is mounted the lamp bulb and the reflecting mirror. The angle of the mirror is controllable from the handle. It is marketed by the Reflex Inspection Light Sales Co., Mt. Vernon, N. Y.

Bertschy Air-Cushion Suspension

Novel among methods of car body suspension is the air-cushion suspension, of the design of the Bertschy Motor Co., illustrated in Fig. 9. The method consists of hanging the inner ends of the springs upon shackles which are slideable upon the frame. From the sliding shackle a rod extends to a plunger G in a cylinder H. The motion of G is taken up by the resistance of the spring I. The motion is further damped by the plunger K in the cylinder L which is located in the center of the car and is operated by the compression of the air in the cylinders H on each side of the car and thus tends to equalize them. The amount of air or spring pressure or both is arranged to be just sufficient to sustain the weight of the car when running on good roads. In a down-

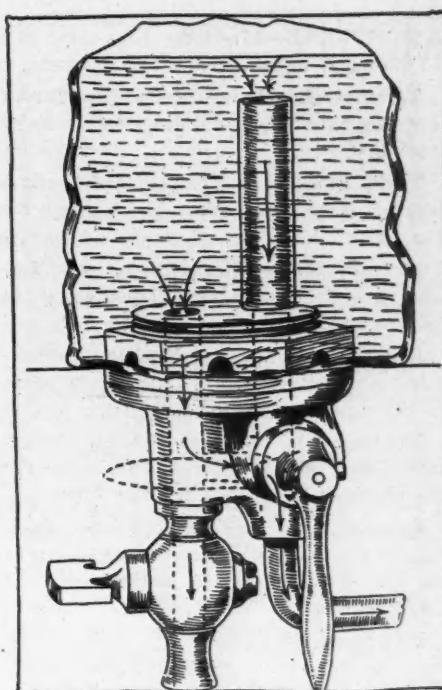


FIG. 11—SENTINEL GASOLINE TANK ALARM

ward motion the springs on the axles are compressed, causing upward motion of the bellcranks C and B. The cylinder L connected by pipe J to cylinders H has a plunger K resting against the spring M, the tension of which is regulated by the adjusting screw N. O is a vent to prevent a vacuum in cylinder L. With heavy commercial vehicles, provision is made for an additional air supply for the pneumatic feature.

Motor Boots

Special boots for motor car drivers in cold weather are made by the Automobile Apparel Co., New York City. These are intended to be worn over the shoes and are of wool-lined leather. They are very light and are provided with buckles to permit them to be quickly donned. They are made in the ordinary boot height and half-hip height. The same firm is also marketing combination overalls to be slipped on when it is necessary to work about the car. They are designed to afford entire protection for the clothes.

Cushion Fender

The Welton Automobile Fender Co., Columbus, Ohio, is marketing a cushion fender which absorbs the shock of collision and prevents damage to either car or object struck. It consists of a rubber cushion 2½ inches in diameter and 64 inches long mounted on a bar steel frame. The cushion is made of 9 ply fabric with rubber inside and out, leaving an air space of 1½ inches.

Auto-Lock

The Globe Auto-Lock Co., of Canisteo, N. Y., has brought out a lock for shutting off the gasoline at the tank. This device is provided with a key which will prevent the opening of the gasoline line and thus prevent the theft of the car, and it will also prevent loss of gasoline by evaporation while the car is standing.

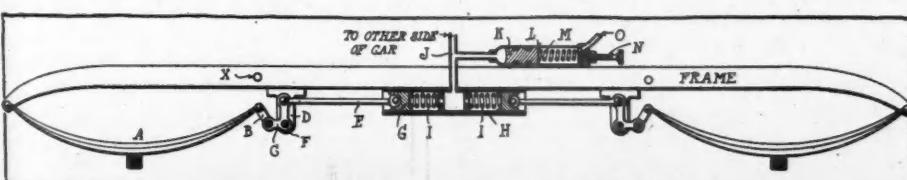


FIG. 9—BERTSCHY AIR-CUSHION SUSPENSION



FIG. 10—PEERLESS TIRE PUMP IN OPERATION.

MONTREAL—Firestone tires are now handled in Montreal by J. Marceau.

Toronto—The Independent Tire Co. of Toronto, Limited, is building a factory at Guelph, Ont.

York, Pa.—T. S. Pfeiffer, 323-25 East Market street, has taken the agency for the National.

Moscow, Idaho—Tim Sullivan of Moscow, has been appointed Ford agent in this territory.

Anderson, Ind.—The Mosher Automobile Co. of Anderson has changed its name to the Anderson Automobile Co.

Montreal—A. Beaudry, 609 St. Urbain street, has been appointed distributor for the province of Quebec for the American.

Syracuse, N. Y.—The Syracuse Auto Supply Co., Inc., will have a new store in the Gurney building, to be in charge of B. R. Newhall.

Pittsburgh, Pa.—The C. L. Sullivan Co. has erected a new enameling factory on South Euclid avenue for the purpose of enameling motor car parts exclusively.

Louisville, Ky.—The Leyman Motor Car Co. has moved its salesroom and office from Jackson and Broadway to the southwest corner of Third avenue and Breckinridge street.

Ottawa—Among the companies incorporated is the Victoria Garage Co., Limited, Ottawa, capital \$100,000. The capital stock of Brigdens, Limited, Ottawa, has been increased from \$100,000 to \$250,000.

Pittsburgh, Pa.—Roger L. Flynn, formerly manager of the National Automobile Co.'s garage at 5917 Baum street, has purchased the entire business, which will hereafter be known as the Flynn Motor Car Co.

Minneapolis, Minn.—G. E. Holmes and A. B. Curry have formed the Veerac Sales Co. and have taken the agency for the Veerac Motor Co., which makes light trucks. The company has taken a garage at 1790 University avenue, St. Paul.

Pittsburgh, Pa.—W. F. Reynolds, formerly manager of the Pittsburgh branch of the Franklin, has sold the local agency to Murray Carr, formerly local representative of the Owen car. Mr. Reynolds will act as special representative for the Franklin factory.

St. Louis, Mo.—The St. Louis branch of the Franklin Automobile Co. has been purchased by the Franklin Auto and Supply Co., and will be conducted as a dealership, with Joseph B. Dryer as the active head of the business. The new concern is located at 1521 North Grand avenue.

Pittsburgh, Pa.—The Universal Motor Car Co. has been given the agency for the Lion in this territory and also the Eclipse truck. The company was recently incorporated under the laws of Pennsylvania with a capitalization of \$25,000. The company has temporary quarters at 6115 Center avenue but is planning the con-

Brief Business

struction of a modern garage and exhibition room.

Syracuse, N. Y.—Sauter & Tuttle, of Canastota, will handle Overland cars in Madison county.

Quebec—J. M. Laundry has been appointed agent for the province of Quebec for Rambler and Speedwell cars.

Pittsburgh, Pa.—The Vestal Motor Car Co. has taken the Pittsburgh agency for the Velie truck for western Pennsylvania.

Philadelphia, Pa.—The American Motor Truck Co. will have the exclusive agency for the Hart-Kraft trucks in the Quaker city during 1912.

Columbus, O.—The Ohio Carbo-Light Sales Co. of 149 North Fourth street, has been organized to act as sales agent for the Carbo-Light tanks in Ohio.

Los Angeles, Cal.—The Western Rubber and Supply Co. has opened a branch store at 66 South Fair Oaks avenue, Pasadena, with J. B. Scullin as manager.

Pittsburgh, Pa.—The Richardson-Neighbors Motor Co., local agent for the Hupmobile, has opened a large exhibition room and garage at 5919-5921 Baum street.

Cincinnati, O.—The Schacht Motor Car Co. has decided to open a factory branch in Memphis in charge of B. J. Barrier. He will be located at High, Washington and Adams avenues.

Boston, Mass.—The Boston branch of the Kisselkar company soon will be housed in a new home at the corner of Commonwealth and Pleasant streets, Back Bay. Work on the building will begin shortly.

Toledo, O.—The Banting Machine Co. has secured rights as sole distributor for Patterson cars in more than half of the state of Ohio, including the Cleveland territory. A selling branch may be established in Cleveland.

Kansas City, Mo.—The Bond Motor Co., Franklin dealer in this city, is erecting a three-story structure, with a frontage of 50 feet and a depth of 135 feet. The equipment of the garage includes an electric elevator of 7,000 pounds capacity.

Louisville, Ky.—The Yager Motor Car Co., local agent for the Peerless and Columbus electric, has taken the agency for the Hupmobile. Warren Shalleross, who was formerly connected with the Roy E. Warner Co., has purchased a half interest in the concern.

Buffalo, N. Y.—The Lippard-Stewart Motor Car Co., of Buffalo, manufacturer of delivery cars, has engaged the services of Charles H. Dahlquist as assistant chief engineer. For 2 years past Mr. Dahlquist has been engaged with the International Harvester Co., at Akron, Ohio,

and as chief engineer of the Harvester company's motor car business.

Montreal—A. Levesque will handle the Abbott-Detroit for the city of Montreal.

Concord, N. H.—The N. H. Auto Co. has closed for the Velie agency in Concord and vicinity.

Essex Junction, Vt.—Walter V. Johnson has closed for the Velie pleasure and commercial car agency for 1912.

York, Pa.—Hart-Kraft trucks will be handled in Hagerstown and vicinity by the Hagerstown Garage Co., Hagerstown, Md.

Chicago—The La Salle Auto Sales Co. has been established at 2031 Michigan avenue, where it will make a business of handling used cars.

Toledo, O.—Baumgardner & Kirby, local distributors for Marathon cars, have secured the agency for the Cass line of motor trucks in northwestern Ohio.

Calumet, Mich.—The Michigan Auto Co. of Calumet, distributor here for the Chalmers car, has also taken the agency for the Studebaker line and Flanders cars.

Chicago—Charles S. Monson, western sales manager for Gray & Davis, has handed in his resignation, effective March 1. Mr. Monson has made no definite decision as to future plans.

York, Pa.—The Auto and Truck Sales Co. has opened headquarters at 362-364 West Market street. The company has taken the agency for the Fiat, Stoddard-Dayton, Baker electrics and Sampson trucks.

Sheboygan, Wis.—George Bessinger and Harry B. Moore have formed a partnership and leased the Aldag brick building at 827 Pennsylvania avenue for garage, salesrooms and repair shop. The building is being remodeled.

Chicago—A building is to be erected for C. P. Kimball & Co., manufacturers of bodies, at the southwest corner of Michigan avenue and Thirty-ninth street. The structure will be erected at a cost of \$300,000; it will be made of concrete and steel.

Portland, Ore.—The King Transportation Co. of Portland has consolidated with the A. G. Ruth Co. of Philadelphia. The King company operates the Tyrrell sightseeing cars and has made arrangements to run two more Kelly trucks during the coming summer.

Spokane, Wash.—The Everitt-Northwest Co. has appointed the following sub-agents: Washington Motor Car Co., Oroville, Wash., R. H. Morrell and D. L. White, Whitman county, and D. D. Skinner, Ritzville, Adams county; S. G. Garrett, Everitt agent for Shoshone county,

Announcements

Idaho, has opened a new garage and salesroom in Wallace, Idaho.

Syracuse, N. Y.—F. H. Johnson is now agent for the Locomobile in this city.

Toronto—The T. Eaton Co., Limited, is now featuring the Waverly electric in this city.

Lima, O.—The Motor Sales Co., 123 East High street, has taken the agency for the American.

Atlanta, Ga.—The Cole Motor Co. of Georgia has moved to a new location on Peachtree street, between Harris and Cain.

Detroit, Mich.—Lathrop Collins of Chicago has been appointed to the position of service manager for the King Motor Car Co. of Detroit.

New York—Fred J. Titus, for the past year selling Alecos retail, is now associated with the wholesale department. He will assist in establishing agencies.

Los Angeles, Cal.—L. R. Carpenter & Co., local agents for the Dorris and Abbott-Detroit line, have moved into their new quarters at Pico and Hill streets.

Superior, Wis.—The Allen Peck Co. has taken the agency for the Chase commercial car for Douglas county, Wis., and St. Louis county, Minn., of which Duluth is the seat.

Boston, Mass.—The O'Neil Tire Protector Sales Co. has opened an agency in Boston in the Boston Motor Co.'s garage on Ipswich street. James Waters is in charge of it.

De Pere, Wis.—The De Pere Motor Car Co. has been organized by J. J. Hallett and D. J. Miller to handle the American in the Wisconsin territory, save Milwaukee and southern counties.

York, Pa.—A. H. P. Sechrist, proprietor of the Southern Pennsylvania Auto Co., 243 South George street, has taken the exclusive agency of the 1912 Marathon line in York and Adams county.

Spokane, Wash.—The retail department of the E-M-F Spokane Co. has been discontinued. The Northwest Auto Supply Co., 1201 First avenue, has been appointed Spokane agent for the Studebaker product.

Montreal—The J. M. Landry Co. contemplates opening a Montreal branch for the handling of the Rambler and Speedwell. This agency also handles the Hupmobile for the district between Three Rivers and the Maritime provinces.

Toronto—E. A. Hall, formerly of the Hall & Thomas Motor Co. of Vancouver, B. C., has floated an accessory company under the name of the Hall Motor Supplies Co., at 141 King street, east. This company will handle exclu-

sively the lines controlled by the Emil Grossman Co., of New York and Detroit.

Montreal—E. H. Girard, 1719 St. Catherine, east, is Canadian distributor for the Clark.

Montreal—The Brantford Carriage Co., Limited, is manufacturing the Seitz truck in Canada.

Syracuse, N. Y.—The Central City Rubber Co. has the local agency for the Meteor self-starter.

York, Pa.—A combination garage and repair shop has been opened by M. E. Renner, rear 118 South Queen street.

Columbus, S. C.—The Hubbard Motor Car Co. has purchased the good will and motor car interests of the Clio Implement Co.

Boston, Mass.—The Amplex, handled in Boston by S. J. Wise & Co., has moved into larger quarters at the corner of Boylston and Fairfield streets.

Wausau, Wis.—T. H. Jacobs has purchased the Coliseum building and will remodel it into a garage and repair shop. He will abandon his present garage.

Tacoma, Wash.—The Winton Motor Carriage Co. has opened its Tacoma agency and has established quarters at 1214 Tacoma avenue, with H. T. Moody in charge.

Cincinnati, O.—The Ohio Motor Car Co. announces the appointment of D. W. Rudisell as district manager of the Ohio line in Canada. Mr. Rudisell will make his headquarters in Toronto.

Chicago—The property at 2807 Michigan avenue, 40 by 160 feet, is to be improved with a new two-story building which has been leased for 10 years to the John Bender Co., selling agent for the Garford car. The building will cost about \$40,000.

Atlanta, Ga.—The Atlanta branch of the Stearns company and the Atlanta branch of the Hupp Corporation have moved into a new building at North avenue and Peachtree street. The Stearns company will have a service garage on North avenue.

Madison, Wis.—The American Brass Co., a Connecticut corporation capitalized at \$15,000,000, has filed articles and a statement to do business in Wisconsin. The company's interest in Wisconsin is given at \$1,558,844 and the fee for filing the articles was \$1,588.44.

Atlanta, Ga.—The Gewinner Co. has been organized and will about March 15 be installed in a new building on Peachtree street, where it will sell accessories. The officers of the new company are John K. Gewinner, president; H. A. Sage, vice-

president; I. Y. Sage, treasurer, and Jos. G. Fitzsimmons, secretary.

Berlin, Wis.—The Johnson-Fortnum Machine Works has taken the agency for the Reo.

Lima, O.—The Griffith Auto Sales Co., 127 South Elizabeth street, has taken the agency for the Krit.

Chicago—A Monitor branch will be established at 421 Michigan avenue in charge of J. E. Norling.

Minneapolis, Minn.—The Eagle Motor Works has taken the agency for the Metz cars in the northwest.

Louisville, Ky.—The Urwick Motor Car Co., agent for the Marmon and Baker electric, has acquired the agency for the Hudson.

Seattle, Wash.—E. H. Brooks and J. C. Bunch, will represent the Oldsmobile here. The location of the new agency has not as yet been announced.

St. Louis, Mo.—The Southern Auto and Machinery Co., the St. Louis representative of the Ohio line, is now occupying new salesrooms at 3033 Locust street.

Worcester, Mass.—The E. T. Wood Co. will act as the Worcester county agent for the Havers six. Edward F. Matthews, local agent for the Ford cars, will open a large salesroom and garage at 721 Main street.

Hudson, N. Y.—Edward J. Malley and John Hester have leased a building at the corner of Warren and North Third streets. The agency for the Franklin car in this territory has been secured. Other cars also will be handled.

Pittsburgh—The Murray Mfg. Co. has been chartered here for the purpose of manufacturing and selling motor cars, motor trucks and motor boats. James E., Frank P., and Thomas Murray and John L. Howder and W. D. McBryar are the incorporators.

Minneapolis, Minn.—The Firestone Tire and Rubber Co. has opened a branch in Minneapolis and George N. Martin of the St. Louis branch will be manager. O. Fenstermacher will continue his agency for the tires. The branch will serve the northwestern territory.

Cleveland, O.—The Judd Automobile Co. has been incorporated with a capital of \$20,000 to purchase and sell motor cars, operate a garage and repair shop. The incorporators are J. F. Judd, Jr., Charles A. Lewis, Harry E. Davis, Raymond F. Blackeslee, and Ivan T. Quick.

Minneapolis, Minn.—George M. Martin, for some time past manager of the St. Louis branch of the Firestone Tire and Rubber Co., has been transferred to Minneapolis, to take charge of the new Firestone branch which has just been established at 827 Hennepin avenue. J. P. Patterson, who has been office manager of the Chicago branch of the Firestone Tire

and Rubber Co., has been promoted to the management of the St. Louis branch of the company.

Montreal—Frigon & Baker in addition to handling the King have taken on the agency of the Winton.

York, Pa.—T. S. Pfeiffer, 323-325 East Market street, will handle the Mitchell cars in this city and vicinity.

Chicago—The Argo electric will occupy the building at 2412-14 Michigan avenue when the Cadillac moves into its new quarters.

Cincinnati, O.—Edgar E. Muller has been appointed service manager of the recently established service department of the Ohio Motor Car Co.

Ottawa—H. Ketchum & Co. have arranged to represent the Napier in Ottawa, also the Roll-Royce and Daimler agencies for the dominion of Canada.

Boston, Mass.—The Lexington is now being marketed in Boston by a new company with A. T. Nichols as manager. Salesrooms have been secured at 1020 Boylston street.

Ottawa—The corner of Bank and Albert streets is now occupied by the Ottawa-Beach Motor Co. This company has secured the territory for Ottawa and eastern Ontario for the Overland cars.

Appleton, Wis.—Elmer Bleick, agent for the Overland and Warren and the Kissel truck, has disposed of his garage and business to A. H. Gorges, representing the E-M-F and Cadillac. Mr. Bleick will retire.

Boston, Mass.—The Whitney-Barney Co., agent for the Selden, Lion and the Gramm truck, has taken on the agency for the Chadwick six. It was formerly handled here by Horace G. Kemp, of Cambridge.

Findlay, O.—W. D. McCaugley has assumed the general management of the Adams Brothers foundry and machine shops in this city, maker of the Adams truck. The assistant to the general manager will be Bernard Bigelow.

Minneapolis, Minn.—The Locomobile Co. of America has leased the former garage, show room and offices of the Twin City Taxicab Co., 832 Hennepin avenue, Minneapolis, and will put in a full line of cars and trucks. M. P. Leihy is the manager.

Spokane, Wash.—Overland agents have been secured in a number of inland empire towns during the last 2 weeks, the following being the latest to sign contracts: Rosalia Hardware Co., Rosalia; Montague & Robinson, Pomeroy; Phillips & Staggs, at Weston and Pendleton, Ore.

York, Pa.—J. W. Richley, former proprietor of the Southern Pennsylvania Auto Co., has leased the large storage house at the rear of 237 East Philadelphia street, which will be converted into a garage with 14,000 square feet of floor space. He has taken the agency for the

Recent Incorporations

New York—Hudson Automobile Exchange, capital stock, \$100,000; general motor car business; incorporators, A. Aragona, A. Shulman, W. F. Burke.

Boston, Mass.—Expansion Spring Rim and Tire Co., capital stock, \$500,000; to manufacture and sell wheels and tires for motor cars; incorporator, C. O. Doyle.

Waterville, Me.—Morrison Motor Co., capital stock, \$100,000; to deal in motor vehicles, agricultural implements, etc.; incorporators, H. Morrison and M. Morrison.

New York—Advance Rubber Co., capital stock, \$150,000; to manufacture tires; incorporators, F. Allison, C. Pinney and I. Glover.

New York—Transportation Sales Co., capital stock, \$550,000; to manufacture motor vehicles; incorporators, H. W. Webb, J. L. Brease, Jr., and A. de Magnin.

Rock Island, Ill.—Tri-City Auto Supply Co., capital stock \$2,500; to manufacture motor cars; incorporators, C. P. Sala, Jr., E. M. Sala and Frank Sala.

Clearfield, Ia.—Clearfield Automobile Co., capital stock \$5,000; incorporators, J. V. Wright, A. B. Clewell and H. H. Young.

Florence, S. C.—J. D. Bridges Co., capital stock \$8,000; general motor car business; incorporators, J. D. Bridges and W. F. Whitley.

Cleveland, O.—Judd Automobile Co., capital stock \$20,000; incorporator, J. F. Judd.

Dover, Del.—National Auto Spring Tire Co., capital stock \$200,000; incorporators, Ralph J. Lacjner, A. H. Karr and F. A. McCloskey.

Fort Worth—Stafford Illuminated Auto Lamp Co., capital stock \$25,000; incorporators, M. Parks, F. W. Schaub, F. Greenwood and others.

Trenton, N. J.—Langhorne Transportation Co., to deal in motor cars.

Buffalo, N. Y.—Centaur Mfg. Co., capital stock \$35,000; to manufacture motor car appliances; incorporators, A. Schmidt, B. Schmidt and J. E. Berry.

Elmira, N. Y.—Hatfield Auto Truck Co., capital stock \$1,500,000; incorporators, D. H. McConnell, A. D. Henderson, A. S. Hoyt and others.

Chattanooga, Tenn.—Chattanooga Truck Co., capital stock \$4,000; incorporators, C. M. Willingham, A. C. Willingham, Z. H. Taylor and R. L. Ely.

New York—Lozier Motor Co., capital stock \$3,000,000; to manufacture motor cars.

Camden, N. J.—United Motors Co., capital stock \$125,000; to manufacture motor vehicles; incorporators, M. H. Carroll, W. B. MacDonald and Harry Berger.

Dunellen, N. J.—Service Garage Co., capital stock \$5,000; to operate garage; incorporators, A. E. Craig, W. W. Stryker and Frederic Harrington.

Hoboken, N. J.—Hudson Motor and Garage Co., capital stock \$50,000; to conduct general motor car business; incorporators, C. C. Moller, R. W. Fulcher and M. Moller.

New York—Greenpoint Taxicab Co., capital stock \$10,000; incorporators, C. W. Hopkins, C. E. Keeler and S. I. Kelton.

Philadelphia, Pa.—Marquette Co., capital stock \$10,000; to manufacture and deal in motor cars and accessories; incorporator, W. R. Watson.

Chicago—Kelly-Springfield Tire Co., capital stock \$10,000; to deal in tires and accessories; incorporator, A. H. Roger.

Dallas, Tex.—Capital City Automobile Co., capital stock \$35,000; incorporators, Pierre Bremond, W. M. Graham, H. J. Grinnan and R. M. Thomson, Jr.

New York—National Auto Spring Co., capital stock \$200,000.

Detroit, Mich.—Miller Car Co., capital stock \$50,000; to manufacture motor cars and parts.

Byesville, O.—Byesville Motor Co., capital stock \$10,000; incorporator, R. S. Hall.

New York—Syracuse Auto Supply Co., to manufacture motors, motor vehicles, etc.; incorporators, C. A. Benjamin and M. C. Block.

New York—American Tire and Rubber Mfg. Co., capital stock \$1,500,000; incorporators, G. G. Steigley, G. D. Hopkins and G. W. Dillman.

Buffalo, N. Y.—Gray Mfg. Co., capital stock \$30,000; to manufacture special machinery, particularly electric motor trucks; incorporators, I. Gray, B. B. Pannett and E. C. Randell.

Pittsburgh, Pa.—Pittsburgh Chalmers Co., capital stock \$100,000; incorporators, A. C. Simler, J. B. Samson and S. E. Murphy.

Indianapolis, Ind.—Automobile Mutual Assurance Co., incorporator, J. R. Moler.

New York—T. F. C. Mfg. Co., capital stock \$30,000; to manufacture engine starters and accessories; incorporators, C. R. Cracy, R. E. Farr and others.

Chicago—Eyles Auto Wheel Co., capital stock \$2,000; incorporators, G. A. Chritton, John H. Lee and R. A. Raymond.

Buick and Ford cars. The new company has taken the name of the J. W. Richley Auto Co.

Montreal—The Modern Garage Co. will look after the interests of the Apperson in Montreal.

Milwaukee, Wis.—The First Avenue garage, owned by Eige Brothers, is local distributor for the Metz line.

Mt. Vernon, O.—Walter G. Lake has completed a new garage and repair shop at 313 South Mulberry street.

Shreveport, La.—E. R. Bernstein, former mayor of this city, has contracted for the Oldsmobile line in this territory.

Columbus, O.—J. C. F. Mott, 286 North Front street has taken the central Ohio agency for the Grabowsky motor trucks.

Syracuse, N. Y.—Extensive alterations are being made at the garage of the Buick-Keating Co., 377 S. Clinton street.

Montreal—Montreal recent incorporations include the Hercules Motor Trucks, Limited, with a capital stock of \$50,000.

Chicago—The Ohio Motor Car Co. of Cincinnati has appointed the A. F. B. Klein Co. as Chicago representatives of the Ohio car.

Springfield, Mass.—The agency for the Franklin car in Hampden county has been taken over by the Springfield Automobile Co., at 40 Liberty street.

Shreveport, La.—J. M. Doll has opened a garage and salesroom in the building 40 by 150 corner of Spring and Crockett streets. He has taken the Krit agency for north Louisiana.

Pittsburgh, Pa.—W. L. Poffingberger, formerly local agent for the Elmore, has taken over the Amplex agency and will use the same garage in Wilkinsburg which was formerly the home of the Elmore.

Portland, Ore.—The Havers has made its debut into the Oregon and Portland field through the Michigan Motors Co., which has the distribution of the Havers in Oregon, Washington, Idaho and British Columbia.

Worcester, Mass.—The Woodward-Reo-pell Co., agent for the Buick, Stoddard-Dayton and the Reo, has given up the agency of the Reo. The Reo agency will be taken up by J. M. Ohde, of the Union garage on Dwight street.

Columbus, O.—The Republic Rubber Co. has opened a branch in Columbus, located at 215 North Front street with B. B. Harris and R. W. Llewellyn in charge as managers. The agency will be operated under the name of the Republic Tire and Rubber Co.

Walla Walla, Wash.—The firm of Dahlen & Stewart of Walla Walla has been discontinued and Howard Dahlen has taken the agency for the Ford car in this city. The last open Ford territory in the state of Washington was closed the past week with John Kelleher, who will open a Ford agency at Ellensburg.